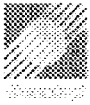




syngenta



Chlorotriazines

Global Product Supply Plan

Full Document

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Reference

Version 1

Issue 1

Approved By

Date August, 2002



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1 Product Life Cycle Status

1.1 Chlorotriazines Objective

This document identifies those areas and goals required to ensure that the Chlorotriazine (hereafter referred to as Triazine) Supply Chain maximises its contribution to the successful implementation of the Triazine Product Strategy as well as support the Syngenta Corn Herbicide Strategy. The vision of the Triazine Supply Chain is to support Syngenta's leadership position in corn by supplying high-value, one-pass triazine containing solutions and by maintaining a low-cost, flexible and responsive supply chain totally integrated with the mesotrione and s-metolachlor (S-MOC) supply chains.

The triazine family of products (atrazine, terbuthylazine, and simazine) is mature with registrations dating back to the late-1950s. The products have been used in all parts of the world for the last 40+ years and have been a highly successful part of the portfolio as both stand alone formulations as well as valuable mix partners with other Syngenta ais as well as competitive ais. Syngenta is the largest supplier of triazines in the world with about 50% of the total market share. However, in recent years, market share, volume and margin position have been threatened due to several issues:

- Regulatory pressures in Europe on all triazines, but especially atrazine
- Regulatory review and pressure in the US on atrazine
- Generic pressures from AGAN, OXON, SANACHEM, other smaller triazine producers, and to a growing extent, low-cost Chinese competitors.
- Low-cost HTC technology being introduced in maize

For these reasons, it is imperative that the Triazine Supply Chain drives an efficient process with particular emphasis on low-cost, high quality product delivered in a timely manner through innovative ideas that challenge historical perspectives. The Triazine Supply Chain is volume intensive due to the fixed cost base at the St. Gabriel plant as well as the high triazine unit capacity (about 69,000 tes/annum). For these reasons higher volumes do equate to lower standard cost. However, the expectation is of lower volumes in the future, perhaps in the 50,000 tonnes per year range in the next 3 to 5 years. Unless changes are made in the current cost structure, Syngenta will lose its competitive advantage in the triazine markets.. The supply chain is addressing this in two manners: lowering the fixed cost base and seeking new volume opportunities.

The fixed cost is being addressed through Project Discovery, which is looking at all aspects of cost at the St. Gabriel plant. Several sub-teams, including the TBIT (Triazine Business Improvement Team) are also working on ideas to ensure a more efficient supply chain.

The volume aspect can be achieved by gaining additional business. The current plan is to get aggressive with generic suppliers and challenge the market pricing in the field. Syngenta still maintains the low-cost position due to back integration to cyanuric chloride and hydrogen cyanide, although this advantage is continuing to shrink due to lower cyanuric chloride costs, differences in margin expectations between Syngenta and generic competitors, and the strength of the dollar against foreign currencies. However, Syngenta is currently still able to leverage this cost position in the market and gain additional business. By doing so, incremental costs are reduced thus further protecting the margins of other products, namely high profit mixtures with mesotrione and S-MOC. Syngenta is also seeking global supply contracts with large global triazine purchasers and leveraging other business opportunities as well, i.e. purchasing raw materials from and selling

triazines to the same company enables some partnering opportunities. This, as well as exploring the sell of triazine intermediates (HCN and cyanuric chloride), will help reduce the fixed cost effect on the triazine cost structure.

The current and future value of the triazines is in the mixture component of the business, as illustrated in the following chart that shows the Sympact atrazine volumes and expected profit analysis for 2007:

Type Formulation	Volume, '000tes	Total % Volume	Sales, Mio \$	% Total Sales	GP %	GP Mio \$	% of Total GP
Mixtures	11	27	304	71	70	214	82
Straight	11	28	71	17	42	30	12
Technical ai	15	38	52	12	32	16	6
For Ametryn	3	7					
Total	40		426			260	

This illustrates that although the amount of atrazine contained in mixtures is only a quarter of the total volume, it accounts for 82% of the total profit contribution of atrazine. However, this also shows that the lower profit, straight and technical offers account for two thirds of the volume, and, as a result, protect the profitability of the mixtures. This is why triazine straight formulations and technical ai sales must be maintained at higher volumes and leveraged with price and margin concessions to protect the valuable, higher profit mixtures with mesotrione and S-MOC.

With these assumptions in hand, the strategy and objective of the triazine supply chain can be summarized in a few words. Triazines will be positioned as a key strategic part of the Syngenta corn herbicide portfolio through technical ai sales, straight formulations, and especially new and existing high value mixtures with mesotrione, S-MOC and other ais. The supply chain will achieve improvements in inventory management, cost of goods sold, working capital, and customer service through innovative ideas and challenges to the status quo.

1.2 Product Strategy Key Assumptions

In line with the Global Corn Herbicide Strategy, there are several recognized trends and assumptions in the corn market:

- Flat acreage projections
- Growth in post-emergence applications
- Few new product introductions – competitive or internally
- Introduction and growth of HTC (Herbicide Tolerant Corns)
- Growth of generic acetanilides (MOC) and triazines
- Increasing triazine restrictions

In line with these trends and assumptions, the Commercial Strategy for the Selective Corn Herbicide Portfolio is to:

- Grow sales with Mesotrione
- Use the unique profile and strong branding of mixtures to
 - Defend against generics

- Grow S-MOC share
- Reduce costs to enable pricing competitive to HTC
- Use Mesotrione to rationalize the existing portfolio
- Preserve regulatory position of Triazines and S-MOC by vigorous stewardship
- Ensure Triazine-free backup strategy is in place in all regions
- Improve business position in post-grass sector

1.2.1 Atrazine (Gesaprim/AAtrex)

(Note: in line with product strategy, the Atrazine name is used as a generic name for all Atrazine brands, including atrazine technical, AAtrex, and Gesaprim)

Atrazine is a mature, core product in the Syngenta Selective Herbicide portfolio. Atrazine is a broad-spectrum herbicide that controls annual dicot weeds and grasses, giving season-long residual activity against late germinating weeds. Atrazine is used mainly in corn crops, but also has uses in other crops including sorghum. Since its initial launch in 1957, Atrazine has become the world's most widely used selective herbicide in terms of volume and sales achieved. Atrazine is positioned as both a stand-alone application as well as in mixtures with other Syngenta active ingredients. In addition, third party sales of the technical ai enable its use as a mix partner with other competitive ais.

The product strategy has been developed with the following key points:

- expect moderate reduction in sales volume (20 – 25%) over the next 5 years due to regulatory restrictions and/or bans, generic penetration in key markets with associated pricing pressure, and penetration of HTC corn into existing markets
- price under pressure with market pricing dropping due to generic pressures (5-15%)
- maintain Atrazine as the premium low-cost, highly effective corn herbicide
- maintain market share in key relevant markets by managing the threat of generic competition and regulatory threats
- continue to provide a ready-mix partner with other Syngenta ais
- reduce the product range by concentrating on global formulations and simplified technical offers
- maintain a diverse product offer ranging from technical ai to higher margin private label, brand, and ready mix formulations.
- obtain global commitments on supply of volumes to major customers as well as current generic competitors, i.e. leverage volumes and current cost advantage in gaining market share

Key to the success of the product strategy is a reliable, responsive, high-volume, and cost effective supply chain. In order to remain competitive in the generic and HTC markets, the supply chain must reduce costs through raw material pricing, fixed cost reduction initiatives, and leveraging production capabilities to capture higher volumes from generics/competitors to reduce effects of fixed cost absorption. However, fixed cost must also be reduced in order to remain competitive and cost effective not only in straight markets but especially in leveraging triazine mixtures in competition with HTC crops. The supply chain must also work with commercial colleagues to rationalize and simplify the range, manage inventory levels, and support business initiatives in the regulatory defence arena.

Supply Chain Strategy

- Maintain single, stable AI supply with capacity to meet Syngenta and competitive customer requirements
- Support formulation strategy from a central plant with regional satellite locations as needed; support satellite packaging plants.
- Maintain quality systems to allow value-added product segmentation based on manufacturing and analytical capabilities allowing premium pricing in market.
- Increase production volumes at plant to supply other competitive mix partners as well as generic competitors as a tool to reduce fixed cost portion of COGS.
- Aggressive identification and implementation of synergy opportunities to reduce fixed and variable cost components, i.e. raw material contracts, sale of intermediates, etc.
- Rationalize and simplify the range – identify high cost/low benefit skus and work with PM to eliminate from portfolio and substitute with other existing products/packages.
- Support global formulations where necessary.
- Actively support and ensure successive launch of ready mix formulations with new/current blockbuster ais.
- Support business regulatory defence to keep as key part of portfolio especially in ready mix formulations
- Identify scenarios to manufacture lower volumes at a lower price to stay competitive with HTC and generic threats – aggressive cost reduction, alternate sourcing, provide material to generic competitors, etc.

1.2.2 Terbutylazine (Gardoprim)

(Note: in line with product strategy, the Terbutylazine name is used as a generic name for all Terbutylazine brands, including terbutylazine technical and Gardoprim)

Terbutylazine was first registered in 1970 in Switzerland. Terbutylazine is a mature, core product in the Syngenta Selective Herbicide portfolio. It is used primarily in maize areas where atrazine is banned or restricted or in perennial crops such as grapes. The largest terbutylazine market is in EU/AME with the largest markets in France, South Africa, Germany, Spain and Portugal.

Terbutylazine is a broad-spectrum selective herbicide that controls annual dicot weeds and is used from pre-plant to early post-emergent crops, giving season-long residual activity against late germinating weeds. Terbutylazine is used in grapes, maize, olives, citrus, and pome fruits. Terbutylazine is positioned as a low cost, highly effective herbicide with strength as a mix partner in Syngenta products in maize and grapes primarily in EU&AME. Terbutylazine is used in combination with other key Syngenta ais especially S-MOC and pyridate. Terbutylazine will be used in mixtures with mesotrione and S-MOC in markets not allowing atrazine.

The product strategy has been developed with the following key points:

- important as key back-up solution to atrazine under banned/heavily restricted use scenarios.
- stable to moderate reduction in sales volumes due to focus on maize and sorghum
- regulatory use restrictions or bans and HTC penetration may drastically reduce volumes
- range will be reduced with focus on global formulations.

- will continue to be used as a mix partner with other new Syngenta offers

Key to the success of the product strategy is a reliable, responsive, high-volume, and cost effective supply chain. In order to remain competitive in the HTC markets, the supply chain must reduce costs through raw material pricing and fixed cost reduction initiatives. The supply chain must also work with commercial colleagues to rationalize and simplify the range, manage inventory levels, and support business initiatives in the regulatory defence arena.

Supply Chain Strategy

- maintain single, stable AI supply with capacity to meet Syngenta requirements.
- will have one campaign of ai per annum in late fall to fulfill an annual requirement
- support formulation strategy from regional satellite locations as needed.
- aggressive identification and implementation of synergy opportunities to reduce fixed and variable cost components, i.e. raw material contracts, sale of intermediates, etc.
- rationalize and simplify the range – identify high cost/low benefit skus and work with PM to eliminate from portfolio and substitute with other existing products/packages.
- support and ensure successive launch of global ready mix formulations with new/current blockbuster ais.
- support business regulatory defence to keep as key part of portfolio especially in ready mix formulations
- identify scenarios to manufacture lower volumes at a lower price to stay competitive with HTC and generic threats – aggressive cost reduction, alternate sourcing, provide material to generic competitors, etc.

1.2.3 Simazine (Princep/Gesatop)

(Note: in line with product strategy, the Simazine name is used as a generic name for all Simazine brands, including simazine technical, Princep and Gesatop)

Simazine was first registered in 1956 in Switzerland and in 1966 in the US, it's largest use area. Simazine is a mature, supplementary product in the Syngenta portfolio. The largest simazine markets are NAFTA (US), APAC (Australia), and LATAM (Brazil).

Simazine is positioned as a low cost, highly effective broadspectrum selective herbicide used in fruits and nuts, forestry, maize, sugarcane, vegetables, and oil seed crops. It has broad control of annual dicots and some grasses and is used from pre-plant to early post-emergent crops with season-long residual control. Product offer ranges from technical material to higher margin brand formulations.

The product strategy has been developed with the following key points:

- stable to slight/moderate reduction in sales volumes
- range will be reduced with focus on global formulations
- possible use as an atrazine substitute/replacement in the US
- regulatory use restrictions or bans may drastically reduce volumes

Key to the success of the product strategy is a reliable, responsive, high-volume, and cost effective supply chain. In order to remain competitive in the HTC markets, the supply chain must reduce costs through raw material pricing and fixed cost reduction initiatives. The supply chain must also work with commercial colleagues to rationalize and simplify the range, manage inventory levels, and support business initiatives in the regulatory defence arena.

Supply Chain Strategy

- maintain single, stable AI supply with capacity to meet Syngenta requirements.
- will have up to two campaigns per annum to meet annual requirements.
- support formulation strategy from a central plant with regional satellite locations as needed; support satellite packaging plants.
- aggressive identification and implementation of synergy opportunities to reduce fixed and variable cost components, i.e. raw material contracts, sale of intermediates, etc.
- rationalize and simplify the range – identify high cost/low benefit skus and work with PM to eliminate from portfolio and substitute with other existing products/packages.
- support global formulations as necessary.
- aggressive inventory management to reduce drastically from historical levels
- investigate cost opportunities to formulate from technical vs. in-unit as a means to reduce inventory levels.
- support business regulatory defence
- identify scenarios to manufacture lower volumes at a lower price to stay competitive with HTC and generic threats – aggressive cost reduction, alternate sourcing, provide material to generic competitors, etc.

1.3 Product Range

As identified in both the global Corn Herbicide and individual ai strategies, there will be a reduction in triazine formulations with a continued focus on global formulations and mixtures with other lead ais. The following table illustrates the planned reduction of triazine lead formulations over the next 5 years:

AI	Current Formulations	Identified Reduction	Future Formulations
Atrazine	12	3	9
Simazine	5	0	5
Terbuthylazine	11	10	1
Total Triazines	28	13	15



1.3.1 Formulation & Pack Range

1.3.1.1 Atrazine

Atrazine has a large current portfolio due to both lead ai and non-lead ai formulations. The formulations are, for the most part, used in varying areas. There are a few country/regionally specific formulations, but these are under review with a goal of harmonizing into global formulations as they fit.

Atrazine lead ai formulations, pack sizes and range status are:

Design Synonym	Product Name	Country	Pack Sizes	Status
A10321A	Marvel	Mexico		Phase-out 2003
A1317A	Gesaprim 80 WP	Sudan, Egypt	20 Kg	Phase-out 2003
		Philippines	10X1 Kg	Phase-out 2002
A1317U	Gesaprim 80 WP	Cuba	20 Kg	Phase-out 2002
A13599A	Gesaprim 600 SC	Australia	20L, 100L, 1000L	
A3491AX	Gesagard 500 FW	Argentina	2X10L	
A3491BH	Gesaprim 500 FW	Sudan, Ethiopia	20L, 4X5L	Phase-out 2002
A3491D	Gesaprim 500 FW	Argentina	2X10L	
A3491S	INDUSTRIAL Gesaprim 500 SC	Brazil	20L	
	Gesaprim 500 SC	Brazil	4X5L	
		Ireland	10X1L, 4X5L	
		Turkey	4X5L	
		Belgium	4X5L, 20L	Phase-out 2002
	Gesaprim 500 FW	Japan	10X1L	
		Malaysia	6X4L	
		Greece	10X1L, 4X5L	
		Nigeria	4X5L	Phase-out 2002
	Gesaprim 50 SC	Panama	10X1L, 4X5L, 20L	
	GESAPRIM	United Kingdom	10X1L, 4X5L	Phase-out 2003
	Gesaprim 500 FW	Portugal	10X1L	
A3966L	Primatop 500 SC	Brazil	4X5L, 20L	
A3967G	INDUSTRIAL Primatop 500 SC Gesaprim Combi 500 FW	Brazil Mexico	420L 12X1L, 4X5L	Purchased from AGAN
A5852E	Gesaprim 90 WDG	Argentina	10 KG	
		Venezuela	10X1 KG	
		Thailand	12X900 GM	
		Colombia	10X1 KG	

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		Paraguay	10 KG	
		Cameroon	10 Kg	
		Bolivia	10 KG	
		Ecuador	10 KG	
		Uruguay	10 KG	
		Peru	10X1 KG	
		English Caribbean	10 KG, 40X250GM	Phase-out 2003
		Slovakia	4X5 KG	
		Bulgaria	12X1 KG	
		Bosnia/Herzegovina	4X5 KG	
	Aatrex Nine-O	USA	25 LB	
	Gesaprim 90 WG	Guatemala	50X20 KG	
		Poland	4X5KG	Phase-out 2003
		Chile	10 KG	
		Honduras	10 KG	
		Hungary	4X5 KG	Phase-out 2003
		El Salvador	10 KG	
		South Africa	10 KG	
		Czech Republic	10 KG, 4X5 KG	Phase-out 2003
		Egypt	10 KG	
		Yugoslavia	10 KG	
		Panama	10 KG	
		Nigeria	10 KG	
		Nicaragua	10 KG	
		Zambia	10 KG	
		Belize	10 KG	
		Philippines	10X1 KG	
		Reunion	10 KG	
		Costa Rica	10 KG	
		Dominican Republic	10 KG	
		Malawi	10 KG	
		Malaysia	10 KG	
	Gesaprim Calibre 90 WDG	Mexico	12X1 KG	
	Aatrex 90 WG	Thailand	10 KG	
		Pakistan	20X120 GM	
	Gesaprim 900 WDG	Brazil	10 KG	
	Aatrex Nine-O 90 WDG	Canada	10 KG	

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	Aatrex 90	Mexico	25 LB	
	Gesaprim quick	Switzerland	10 KG	
A5852M	Gesaprim Granules 90 G	Australia	10 KG, 15 KG	
A5925E	Primoleo 400	Brazil	4X5L, 20 L	
A8566A	AAtrex 4 L	USA	Bulk, 2X2.5 USG	
	Gesaprim Autosuspensible	Mexico	10X10L, 4X5L, 12X1 L	
	Aatrex 480 Liquid 480 FW	Canada	Bulk, 14L	
	Atrazine liquid (Tech Sales)	Canada	Bulk	
	Aatrex 4L	Mexico	Bulk	
G30027E	Atrazine 980 surfactant free	Croatia	450 KG	
	Atrazina Tecnica	Mexico	450 KG	
	Atrazine Tec.	Zimbabwe	450 KG	
G30027H	Atrazine Tec. (industrial)	USA	992 LB	
G30027U	Atrazine TEC	Australia	450 KG	
	Atrazine 980 TEC	South Africa	450 KG	
		Yugoslavia	450 KG	
		Slovakia	450 KG	
	Atrazine Tech	Guatemala	450 KG	
	Atrazine Tec.	HQ Ind-Sales CH	20 KG, 450 KG	
		France	450 KG	
	Atrazine Tech.	Venezuela	450 KG	
		Colombia	450 KG	
		Poland	450 KG	
	INDUSTRIAL - Atrazine Tec	Brazil	450 KG	
	Atrazin Techn.	Croatia	450 KG	
	Atrazine TEC	New Zealand	450 KG	

Atrazine non-lead ai formulations are:

Design Code	Product Name	Countries	Lead ai	Status
A10318A	Lentagran Combi 350SC	Belarus	Pyridate	Phase-out 2002
A10960A	Primextra S Gold 72EC	Greece	S-MOC	

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A12003A	Primagram Gold 600 SC	South Africa	S-MOC	
	Primagram Gold 660 SC	Ghana	S-MOC	
A12146B	Expert	USA	S-MOC	
A12582A	LibertyPrime	Canada	S-MOC	
A12854F	Mesotrione+SMOC+Atrazine+Benoxacor	USA	Mesotrione	
A12929A	mesotrione +/- atrazine	Japan	Mesotrione	
A3774E	Gesapax Combi 80 WP	Pakistan, Thailand	Ametryn	
A4912E	Gesapax Combi 500 FW	Sudan, Ethiopia, Kenya, Morocco, Tanzania, Mali	Ametryn	
	Gesapax Combi	Nigeria	Ametryn	
	Gesapax Combi 500 SC	Madagascar	Ametryn	
A4912I	Gesapax Combi 500 FW	Australia	Ametryn	
A5069F	Primextra 500 FW	Nigeria	MOC	Phase-out 2002
A5069I	Primextra 500 FW	Morocco	MOC	Phase-out 2002
A5139F	Primextra 500 FW	Pakistan	MOC	Phase-out 2003
A5139L	Gesanon 500 FW	Japan	MOC	
	Primextra 500 FW	Spain, Portugal	MOC	Phase-out 2003
	Primextra 500 FL	Greece	MOC	Phase-out 2003
	Primextra 500 SC	Turkey	MOC	Phase-out 2003
A5141N	Primagram 500 FW	Burkina Faso, Benin	MOC	
A5141S	Primagram 500 FW	Ethiopia	MOC	
A6731A	Gardoprim A 500 FW	Nigeria	Terbuthylazine	Phase-out 2002
A7396B	Gesaprim Super 600 SC	South Africa	Terbuthylazine	
	Terbuzin 600 SC	South Africa	Terbuthylazine	
A8752B	Primextra S 511 FW	France	MOC	Phase-out 2002
	Primextra + Safeneur Micro Safe 15 MG	France	MOC	Phase-out 2002
A9020B	Gesapax Combi 80 WG	Mexico	Ametryn	
	Evik Combi 80 WG	Thailand	Ametryn	

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A9559A	Primagram Gold 660 SC	Cote d'Ivoire, Benin, Mali, Burkina Faso, Togo, Zambia	S-MOC	
	Primextra Gold 660 SC	Australia	S-MOC	
	Primagram 660 SC	Malawi	S-MOC	
	Primextra Gold 660 SC	Nigeria	S-MOC	
A9560A	Bicep II Magnum	USA	S-MOC	
	Parabellum Bicep	USA	S-MOC	
	Primestra Gold 660 SC	Brazil	S-MOC	
	Primagram Gold	Mexico	S-MOC	
A9560D	Primagram Gold 660 SC	Kenya, Tanzania, Ethiopia	S-MOC	
A9561A	Primextra Gold 720 SC	Hungary, Romania, Poland, Belarus, Ukraine, Slovakia, Bulgaria, Slovenia, Pakistan, Bosnia/Herzegovina, Yugoslavia, Cameroon	S-MOC	
A9562C	Bicep Lite II Magnum SC	USA	S-MOC	
	Primextra II Magnum 720 FW	Canada	S-MOC	
	Primextra Gold S 720 SC	Spain	S-MOC	Phase-out 2003
	Primextra S Gold	Portugal	S-MOC	Phase-out 2003
	Primagram Gold 660 SC	Chile	S-MOC	
	Primagram S Gold	Switzerland	S-MOC	Phase-out 2004
A9844A	Gardomil Gold 600 SC	South Africa	Terbuthylazine	
A9877B	INDUSTRIAL - Primaiz Gold 500	Brazil	S-MOC	
X1008924	Galleon 425 SC	South Africa	S-MOC	

1.3.1.2 Terbuthylazine

Terbuthylazine has the most opportunity and identified options for range reduction with the end result of getting to a single global formulation for the lead ai.

Terbuthylazine lead ai formulations are :

Design Synonym	Product Name	Country	Status
A11871A	Prius Pro	France	
A12419A	Carazol Pro	France	

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A5454C	Carazol	France	
A6731A	Gardoprim A 500 FW	Nigeria	Phase-out 2002
A7396B	Gesaprim Super 600 SC	South Africa	
	Terbuzin 600 SC	South Africa	
A7511B	Folar 525 FW	Portugal	Phase-out 2004
		Hungary	Phase-out 2003
		Czech Republic	Phase-out 2003
		Spain	Phase-out 2003
		Slovenia	Phase-out 2003
		Greece	Phase-out 2003
		Nigeria	Phase-out 2003
		Romania	Phase-out 2003
	Folar 525 SC	Cameroon	Phase-out 2003
A7627A	Folar 460 FW	English Caribbean	Phase-out 2003
A7727C	Printop 570 FW	Spain	
	Fenican / Plurians 570 SC	France	
	Gardotop	Switzerland	
A8678A	Mascot 600 SC	Portugal	
		Lebanon	
	Mascot	Switzerland	
A9443A	Gardoprime G	France	Phase-out 2003
GS13529E	Terbuthylazine	Germany	
	Terbuthylazine Tec. L.A.	HQ Ind-Sales CH	
	Terbuthylazine Tec.	Italy	
GS13529F	Bellacide tech bulk (industrial)	USA	
GS13529U	Terbuthylazine 980 TEC	South Africa	
	Terbuthylazine TEC	New Zealand	

Terbuthylazine non-lead ai formulations :

Design Synonym	Product Name	Country	Lead AI	Status
A11997A	Servian Broad Pack	South Africa		Phase-out 2003
A12002A	Sorgomil Gold 600 SC	South Africa		
		Malawi		
	Sorgomil 600 SC	Zambia		
		Sudan		
A12283A	LidoTURBO	Austria		
A12294A	Brons Broad Pack	South Africa		Phase-out 2003
A12812A	Mesotrione+S-MOC+TBA	Italy		
	Callisto+SMOC+TBA	Hungary		

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	Mesotrione+S-Moc+Terbuthylazine SC (1:8.	Poland		
	MST+SMOC+TBA	Greece		
	Calisto/TBA/S-Moc	Tanzania		
A13024A	Zintan Gold Pack	Germany Austria		
	Calisto 3 mix	Romania		
	GS13529/CGA77102/mesotrione KL (147.35/2	Turkey		
A13024B	Zintan Gold Pack (APE free)	Germany		
A3623D	Topogard 50 WP	Czech Republic		Phase-out 2004
		Greece		Phase-out 2004
		Turkey		Phase-out 2004
	Topogard	Switzerland		Phase-out 2004
A3950D	Topogard 500 FW	Pakistan		Phase-out 2004
A3950E	Topogard 500 EC	Spain		Phase-out 2004
	Opogard 500 FW	United Kingdom		
	Topogard 500 SC	Slovakia		Phase-out 2004
	Opogard	Ireland		
A6144C	Primagram Tz 450 FW	Italy		Phase-out 2002
A7396B	Gesaprim Super 600 SC	South Africa		
	Terbuzin 600 SC	South Africa		
A7893A	Primafit 380 FW	Italy		Phase-out 2002
A9239A	Codit 390 FW	Italy		Phase-out 2002
A9476B	Primagram Gold	Italy		
	S-MOC + TBA (codistr.)	Italy		
	Gardo Gold	Germany Austria Switzerland		
	Primextra TZ Gold 500 SC	Slovenia		
	Gardoprim plus Gold 500 SC	Czech Republic Belgium		
A9476C	Gardoprim Gold	Hungary		
	Gardo Gold (APE free)	Germany		
	Sorgomil Gold 500 SC	Zimbabwe		
A9487A	Lido 410 SC	Germany		Phase-out 2005
A9487D	Lido 410 SC	Denmark		Phase-out 2005
	Lido SC 410 SC	Netherlands		Phase-out 2005
	Lido SC	Austria		Phase-out 2005
A9844A	Gardomil Gold 600 SC	South Africa		

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P940013	Mesotrione+Terbuthylazine SC (1:5)	France Belgium		
	Cal Lido (Premix)	Germany		
	Calisto+TBA	Netherlands		
	Calisto + Terbutylazin	Denmark		

1.3.1.3 Simazine

Simazine lead ai formulations are :

Design Synonym	Product Name	Country	Status
A13600A	Gesatop 600 SC	Australia	
A3067B	Simazin 1 G	Japan	
A3796J	Gesatop 500 FW	United Kingdom Morocco	
	SIMAZINE 500 FW	Japan	
	Gesatop	Ireland	
	Simatol 500 SC	Israel	Phase-out 2003
A6119B	Princep Caliber 90 WDG	USA	
	Gesatop 90 WG	Chile	
	Princep 9-T (TO)	Canada	
	Gesatop 90 WDG	Paraguay Uruguay	
	Gesatop quick	Switzerland	
A6119E	Gesatop Granuals 900 WG	Australia	
A8563A	Princep	South Africa	
A8563B	Princep Liquid 4 L	USA	
G27692U	Simazine TEC	Australia	
	Simazine Crop (industrial)	USA	
	Simazine Tec.	Japan Austria	
	INDUSTRIAL - Simazine Tec	Brazil	
	Simazine 987 Tec.	South Korea	
	Simazine tech.	Poland	
	Simazine TEC	New Zealand	
	Simazine Domestic (industrial)	USA	

In addition to lead ai formulations, simazine is also used in the following formulations :

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Design Synonym	Product Name	Country	Lead AI	Status
A3966L	Primatop 500 SC	Brazil		
	INDUSTRIAL - Primatop 500 SC	Brazil		
A5377K	Topeze 500 FW	Brazil		

1.3.2 Development of Range

There is limited triazine development planned in the future. Most of the development involving triazines is around the mixtures with mesotrione. Triazine work will be done in trying to get to a truly global Atrazine liquid formulation as well as developing formulations with alkyl-phenol-free surfactants in response to regulatory issues.

Most of the future work will be done in reducing the range and eliminating low margin/contribution formulations and moving toward global formulations.

2 Customer Requirements

2.1 Differentiated Product Supply and Brand Responsiveness

The triazines all have different responsiveness due to the capacity and schedule of the unit. Atrazine, as a whole can be classified as a responsive product since it is run several times during the year – January through May, August, and November. The Aatrex/Gesaprim brands, as well as the Atrazine technical ai (including domestic US as well as export ai), are generally considered an “A” classification due to the ability to respond to most upside opportunities. The global granule formulation (90WG) is formulated and packaged twice to three times (January, March and November) a year in St. Gabriel to meet global requirements. Technical ai is shipped to regions where other formulations – mostly variation on a global liquid formulation – are made from technical. However, the US private label formulations as well as Surfactant Free technical ai ARE given a “C” classification since they are made to order only, in campaigns, once a year.

Simazine is considered a “C” product due to its seasonal production runs. Simazine is run once – maybe twice – a year to forecast in September/October. An additional campaign may/can be run in June after the spring Atrazine run but only for upside sales opportunities. All of the Princep brand products (granules and flowables) are made in the fall campaign due to capacity and efficiency restrictions. The global granule formulation is made in October and then technical is sent to regions for local formulations. In addition, the simazine campaign must be run in the fall between propazine and terbuthylazine in order to minimize cross-contamination issues within the triazine unit. There are current considerations of adding a second campaign in December (and thus eliminating any June campaign), where only product dedicated to Australia will be milled and packaged.

Terbuthylazine is also considered a “C” product due to limited campaign. Terbuthylazine is run only once a year in the fall (normally October) to fill the next seasons requirements. Due to the regulatory nature of terbuthylazine, it must be run after simazine in order to ensure all Atrazine contamination is removed from the unit. Most of the ai is shipped to EU/AME for formulation and packaging. Technical ai is the only product made during the terbuthylazine campaign.

The table below shows the classification of the products supplied out of St. Gabriel:

Products with Current ABC Classifications

Design Cd	Matl Desc	ABC
<u>Atrazine</u>		
A5852E	AATREX NINE-0 25 LB BAG	A
A8566A	AATREX LIQUID 480 14L (Mag Jug)	A
A8566A	AATREX 4L 2X2 1/2 GAL JUG	A

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A8566A	AATREX 4L BULK	A
G30027F	ATRAZINE TECH 992# LOW TRIS	A
G30027H	ATRAZINE TECH 992# BULK BAG - DOMESTIC	A
G30027J	ATRAZINE TECH. (BAYER) 97.6%	A
G30027U	ATRAZINE TECH 450 KG BAG AUSTRALIA	
G30027U	ATRAZINE TECH 450KG BULK BAG - S.A.	
G30027U	ATRAZINE TECH 450KG BULK BAG EXPORT	
G30027U	ATRAZINE TECH 20KG BAG-DIRECT XPT	
G30027U	ATRAZINE TECH 20KG BAG-XPT	
G30027E	ATRAZINE TECH 450KG BULK BAG SF.	
G30027E	ATRAZINE TECH 992# BULK BAG SF	
A5852E	ATRAZINE 90F 25 LB UNITED SUPPLIERS	C
A5852E	ATRAZINE 90 DF 25 LB. TENKOZ	C
A5852E	ATRAZINE 90 25# CLEAN CROP	C
A5852E	ATRAZINE CONIFER 90 25 LB.	C
A8566A	ATRAZINE 4L 2X2.5GL UNITED SUPPLIERS	C
A8566A	ATRAZINE 4L 2x2.5 USG CLEAN CROP	C
A8566A	ATRAZINE 4L BULK CLEAN CROP	C
A8566A	ATRAZINE 4L BULK VAN DIEST	C
A3491AX	GESAPRIM 50FW 2 X 10 LITER	
A5852E	AATREX NINE-O 10 KG INTL	
A5852E	GESAPRIM 90 WG 10X1 KG BULGARIA	
A5852E	GESAPRIM 90 WG 10 X 1 KG POLAND	
A5852E	GESAPRIM 90 WG 4X5 KG CZECH REPUBLIC	
A5852E	GESAPRIM WDG 4X5 KG HUNGARY	
A5852E	GESAPRIM 90 WG 4X5 POLAND	
A5852E	GESAPRIM 90 WG 4X5 KG SLOVAKIA	
A5852E	GESAPRIM 90 WG 10 KG CAMEROON	
A5852E	AATREX 9-0 1 KG MEXICO	
A5852E	GESAPRIM 90 WG 10X1 KG BOSNIA	
A5852E	AATREX NINE-O 1X10 KG	
A5852E	AATREX NINE-O 1X10 KG	
A5852E	AATREX NINE-O 10 KG INTL	
A5852E	GESAPRIM 90 WG 10X1 KG BULGARIA	
A5852E	GESAPRIM 90 WG 10 X 1 KG POLAND	
A5852E	GESAPRIM 90 WG 4X5 KG CZECH REPUBLIC	
A5852E	GESAPRIM WDG 4X5 KG HUNGARY	
A5852E	GESAPRIM 90 WG 4X5 POLAND	
A5852E	GESAPRIM 90 WG 4X5 KG SLOVAKIA	

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A5852E GESAPRIM 90WDG 10 KG CHILE
A5852E GESAPRIM 90WG 10KG - S. AFRICA
A5852E GESAPRIM 9-0 MANEJ-O-FACIL 5X1.7 KG
A5852E GESAPRIM GRDA 10 KG BRAZIL
A5852E GESAPRIM 90 WDG 10 KG (ARG)
A5852E GESAPRIM 90 10 KG (GTM)
A5852E GESAPRIM NUEVE-O 10 KG
A5852E GESAPRIM NUEVE-O 10 KG (URU)
A5852E GESAPRIM NUEVE-O 10 KG BAG Uruguay
A5852E GESAPRIM 90WDG 10 KG CHILE
A5852E GESAPRIM 90WG 10KG - S. AFRICA
A5852E GESAPRIM 9-0 MANEJ-O-FACIL 5X1.7 KG
A5852E GESAPRIM GRDA 10 KG BRAZIL
A5852E GESAPRIM 90 WDG 10 KG (ARG)
A5852E GESAPRIM 90 10 KG (GTM)
A5852E GESAPRIM NUEVE-O 10 KG
A5852E AATREX NINE-O 25 LB BAG EXPORT
A5852E GESAPRIM NUEVE-O 10 KG (URU)
A5852E GESAPRIM NUEVE-O 10 KG BAG Uruguay
A8566A AATREX LIQUID 480 (RP)
A8566A AATREX 4L BULK CANADA
A8566A AATREX LIQUID 480 (RP)
A8566A AATREX 4L/GESAPRIM AUTOSUSPENSIBLE BL MX

Simazine

A6119B	PRINCEP CALIBER 90 5X10 LB BAG	A
A8563B	PRINCEP 4L 2 X 2 1/2 GAL JUG	A
A8563B	PRINCEP 4L BULK	A
G27692U	SIMAZINE TECHNICAL 1213# DOMESTIC	B
G27692E	SIMAZINE TECH 550 KG BAG AUSTRALIA	
G27692U	SIMAZINE TECH 550KG DIRECT	
G27692U	SIMAZINE TECH 20KG EXPORT	
A8563B	SIMAZINE 4L 2 X 2.5 USG CLEAN CROP	C
A8563B	PRINCEP LIQUID 2 X 2.5 GALLON	C
A6119B	PRINCEP NINE-T 5X5KG	
A6119B	GESATOP 90WG URUGUAY	
A6119B	GESATOP 90 WDG 5X5 KG CHILE	
A6119B	GESATOP 90 WDC 5X5 KG - SPAIN	

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A6119B GESATOP 90WG 5X5 KG S. AFRICA

Terbuthylazine

GS13529F BELLACIDE TECH 992 LB BULK BAG C

GS13529E TERBUTHYLAZINE TECHNICAL 20 KG EU MP

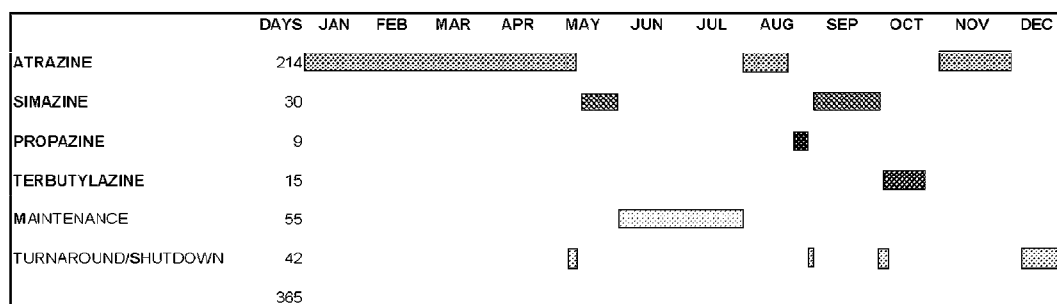
GS13529E TERBUTHYLAZINE EU MP 450 KG BAG

GS13529U TERBUTHYLAZINE TECH MP 450 KG AUSTRALIA

GS13529U TERBUTHYLAZINE TECH MP 450 KG BAG

2.2 Customer Service Levels

Due to the capacity allocation and campaign schedules at the St. Gabriel plant, it is necessary to have some discipline in the ordering of triazine technicals. A typical year in the triazine unit looks like this:



Therefore, firm forecasts are needed as follows:

	Propazine	Simazine	Terbuthylazine	Atrazine
US Production	August/September	September/October	October/November	Multiple Campaigns
Firm Forecast Needed	4 weeks prior to production on tech (sales to Griffin) 2 months on prometryn	3 weeks prior to production	3 months prior to production on Tech 2 months on Terbutryn	3 weeks on tech 2 months on package 2 months on ametryn

2.2.1 Export

- IMCs will receive a notice from US Export with the deadline for firming the demands
- IMCs are to include their safety stock in their demand transmitted to the US as no international safety stock is held in the US

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- Product is produced to forecast
- The US holds the stock until the country requires it.
- Orders are placed via DRP 3 weeks prior to shipment.
- If a country has an unforecasted upside, the US Export Rep will communicate with other countries (including the US) to see if any stock can be freed up to meet the upside demand.
- Formulated product will not be repackaged in the US when product is secured from one country to meet another country's upside (unless the country is willing to pay for the cost and the plant has the capacity and time to complete repackaging). However, the US may send product labeled for another country to meet a requirement. Formulated product would have to be repackaged locally.
- All efforts will be made by the US Export Rep to free up product allocated to another customer or push out demands into the next campaign.
- Export product will be billed to a Hub (Singapore or Panama) or Basel
- The lead-time on bags for Terbutylazine is 80 days.
- Atrazine is produced throughout the year except for June, July, Oct., Nov
- Atrazine production is scheduled in campaigns

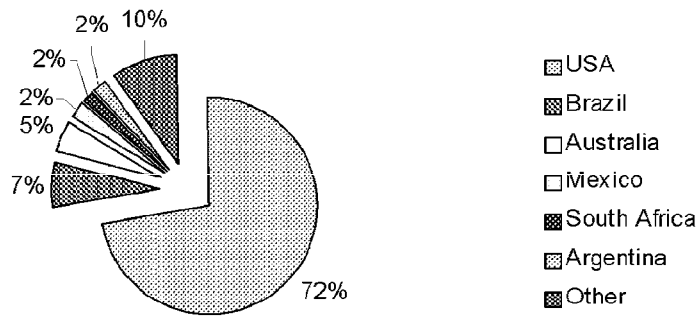
2.2.2 Domestic

- Production is based on forecasted demands.
- Safety Stock is built into the forecasted demands.
- Intermediate Atrazine and Propazine requirements are calculated by MRP based on demands for Ametryn and Prometryn production.
- Orders are placed into SAP by Customer Service and by shipping points for Intermediates.

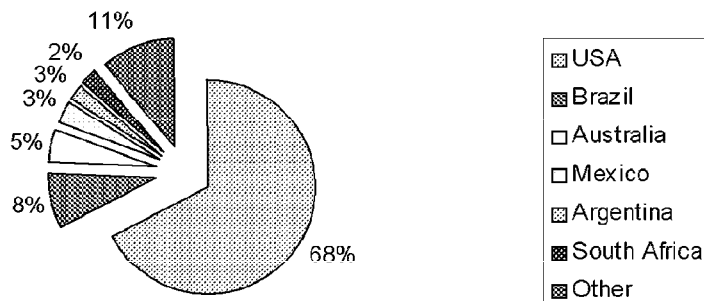
2.2.3 Major Users

- The major users of Triazines are the US, Brazil, Australia and S. Africa. Attached are volumes by location for 2002 and also a view for 2007:

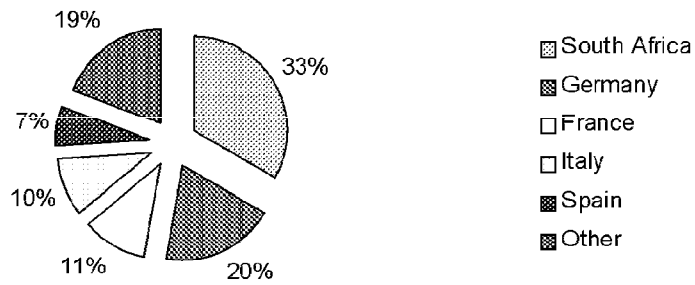
**2002 Atrazine
Top 6 Countries**



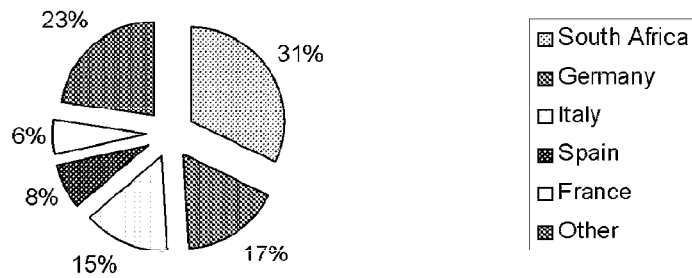
**2007 Atrazine
Top 6 Countries**



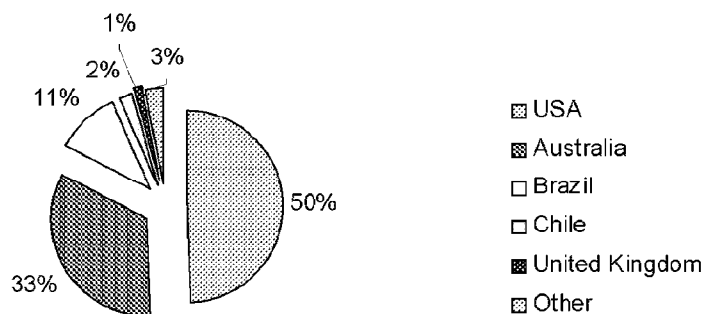
**2002 Terbutylazine
Top 5 Countries**

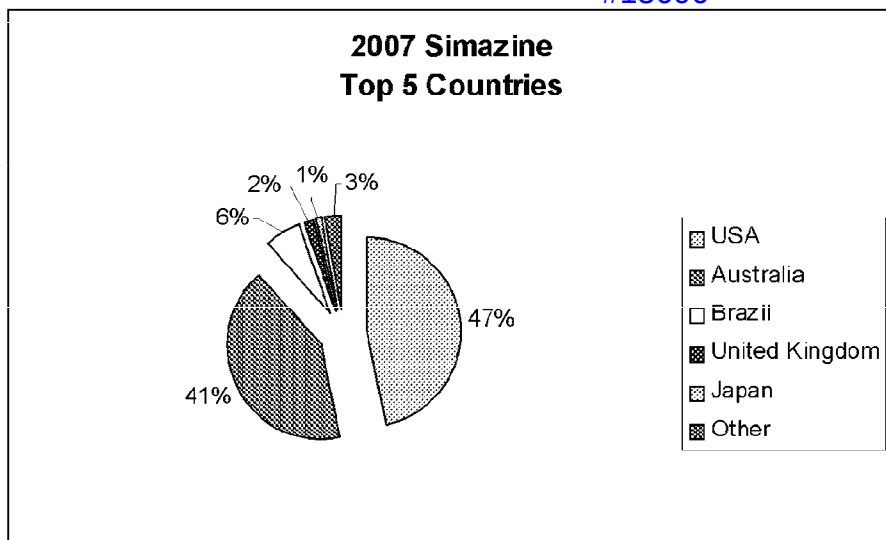


**2007 Terbutylazine
Top 5 Countries**



**2002 Simazine
Top 5 Countries**





3 Risk Management

3.1 GS contributions to life cycle related risks

As discussed earlier, the largest life cycle risk to the triazines are:

- New and improved chemistry
- HTC corn
- Generic producers
- Regulatory restrictions

Fortunately, the triazines have been successful over many years and are valued by the farmer as a cost effective, broad spectrum product. Although new and improved chemistries have been introduced over the last 45 years, none has had the success or wide range use as the triazines. In fact, most new chemistries require the addition of triazines to ensure adequate full spectrum weed control. HTC corn offers an additional threat in that it also is a low cost alternative, although it still requires multiple applications. The triazines must remain competitive and as such be offered at a highly competitive price. This also helps combat the threat of generic competition.

The main initiatives in place within the Triazine Supply Chain to contribute to further life cycle issues are:

- Totally integrate with the mesotrione and S-MOC supply chains to ensure new and exciting formulations are developed and successfully launched to compete with the HTC products
- Ensure fixed cost reduction initiatives are in place and actively managed to allow a lower cost product to be supplied in the future to lower the cost of the Syngenta single application offer to compete against the HTC offer

- Maintain a low cost supply of triazines in order to compete with the generic offers of straight formulations and technical offers. Remain competitive and gain market share from the generics by “partnering” with other basic manufacturers and entering global supply agreements.
- Initiate partnering agreements with other basic manufacturers by leveraging purchasing of raw materials with sell of triazines in gaining a win-win situation.
- Supporting the regulatory defence of triazines. Ensuring the triazines are aligned in the regulatory field with proper back-up strategies in the face of bans, i.e. simazine as a back-up to Atrazine in the US and terbuthylazine as a back-up to Atrazine in EU.

3.2 Business Interruption Risk Analysis (BIRA Study)

The BIRA was formally done in October of 2001 and the resultant study identified three main risks. Following is a table identifying the risk as well as the planned corrective action:

Risk	Corrective Action
<p><u>Loss of chlorine supply</u></p> <p>Continuous production of cyanuric chloride depends on pipeline supply of chlorine from neighbouring Pioneer site. Pioneer is in financial difficulty and has filed for bankruptcy (actually filed for bankruptcy protection and have since emerged from this bankruptcy, although they are still on shaky financial footing).</p> <p>Inventory in Pioneer’s tanks sufficient for 5 days production (if the plant should have to shut down due to bankruptcy)..</p> <p>Supply contract allows for tanks to be filled by third party suppliers (in the case of bankruptcy or other process oriented issues).</p> <p>Alternative cyanuric chloride production capacity in Alabama (Dagussa) is limited to 60% of St. Gabriel site capacity.</p>	<p>Investigate and negotiate access to Pioneer site in the event of a closure due to bankruptcy in order to utilize unloading facility, storage tanks and pipeline.</p> <p>Review contract obligations with legal department to ensure we are adequately covered if bankruptcy issues emerge.</p> <p>Investigate alternate suppliers of chlorine and determine cost and feasibility of receiving railcars of chlorine and commissioning on-site unloading of chlorine through construction of an unloading facility.</p>
<p><u>HCB</u></p> <p>Continuous production of cyanuric chloride (via HCN) depends on pipeline supply of natural gas from various oilfields. The gas contains benzene that the plant does monitor. However, the supply contract does not specify a maximum limit on benzene and the gas companies will not and cannot guarantee a benzene-free supply. The benzene is converted to hexachlorobenzene (HCB) during the trimerization process. The HCB is passed on through the triazine process and does appear in small amounts (<10ppm) in</p>	<p>Continue to monitor benzene level in natural gas and quantify levels of HCB in triazines.</p> <p>Monitor Canadian legislation on requirements for HCB levels in pesticides.</p> <p>Initiate and approve a project for removing the benzene from the natural gas feed to the HCN converter. The benzene can be removed via a condenser that utilizes a pressure drop in cooling the gas feed to <-70°C. the project is currently being authored and we hope to have approved</p>

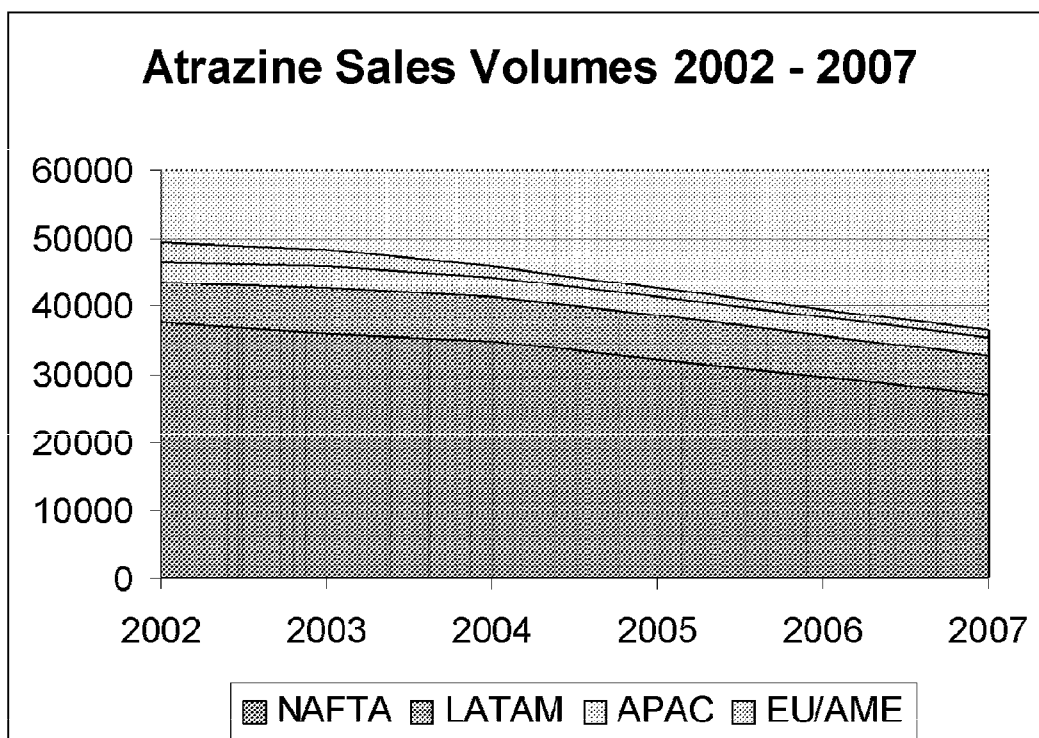
the final product. HCB is considered a carcinogen and is becoming highly scrutinized by the Canadian and US authorities.	for installation during the summer of 2003.
<p><u>Regulatory Pressure</u></p> <p>Significant product revenue is based on Atrazine and other triazines either in stand-alone formulations or in mixtures with other ais. The product is facing registration and regulatory pressures in some countries where re-registration may be difficult.</p>	<p>Continue to monitor regulatory moods globally and stay proactive in initiating corrective actions in support of regulatory defence.</p> <p>Regulatory and technical actions are in place to defend re-registration.</p> <p>Ensure we have a back-up plan for Atrazine replacement with other triazines, i.e. terbutylazine in EU/AME and simazine in NAFTA.</p>

4 Supply & Demand

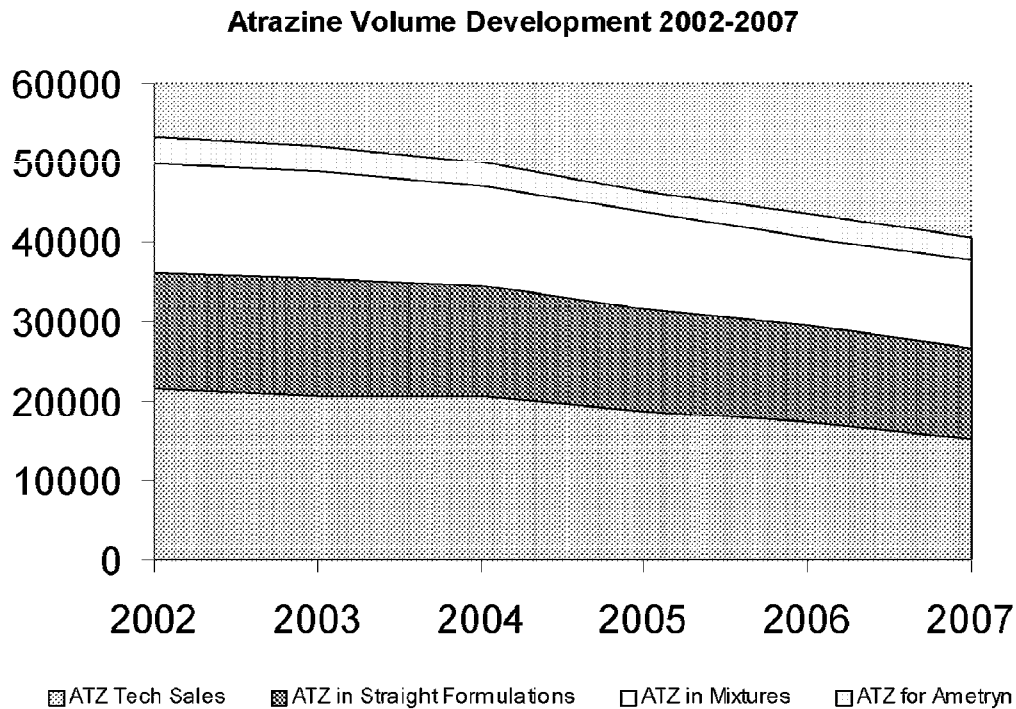
4.1 Demand Forecast & Seasonality

4.1.1 Atrazine

The projected sales curve for Atrazine (in tonnes AI) is shown below (source: Sympact 2002 First cut w/challenge). This sales curve does not represent material needed to supply the ametryn manufacturing process.

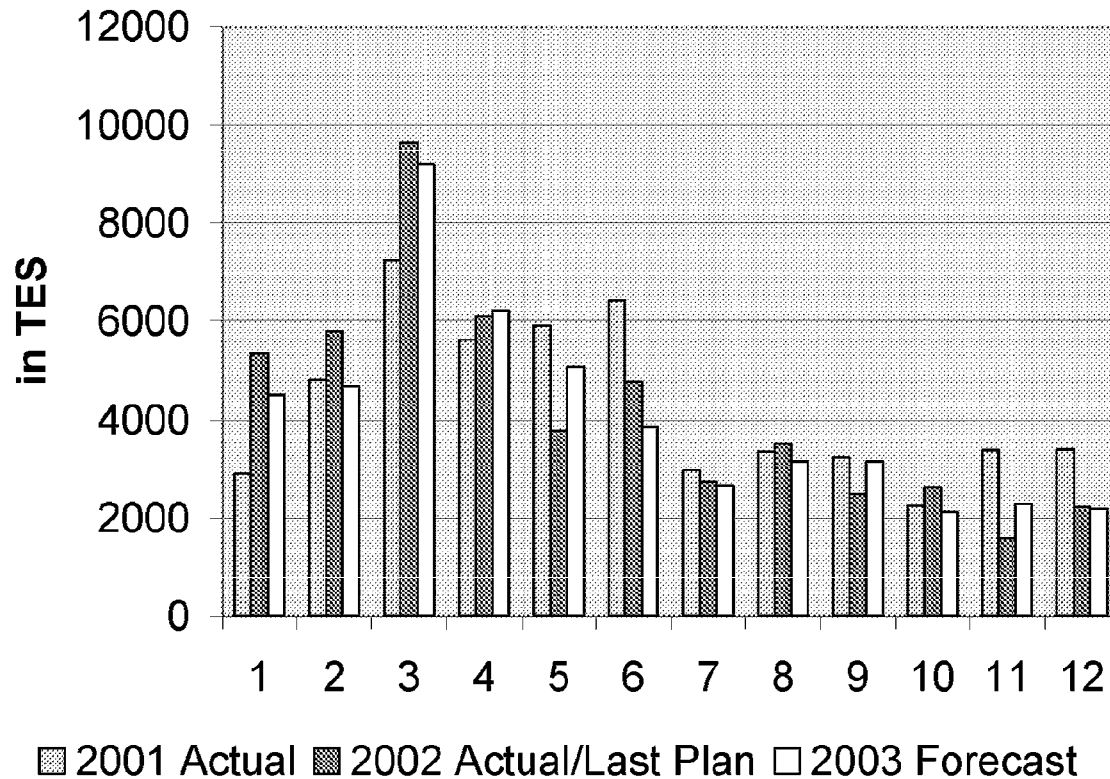


This chart illustrates atrazine sales volumes either as straight tech, atrazine straight formulations, atrazine in mixtures as lead ai and with other lead ais, and includes volumes required to manufacture ametryn (source: Sympact First Cut 2002 w/challenge):



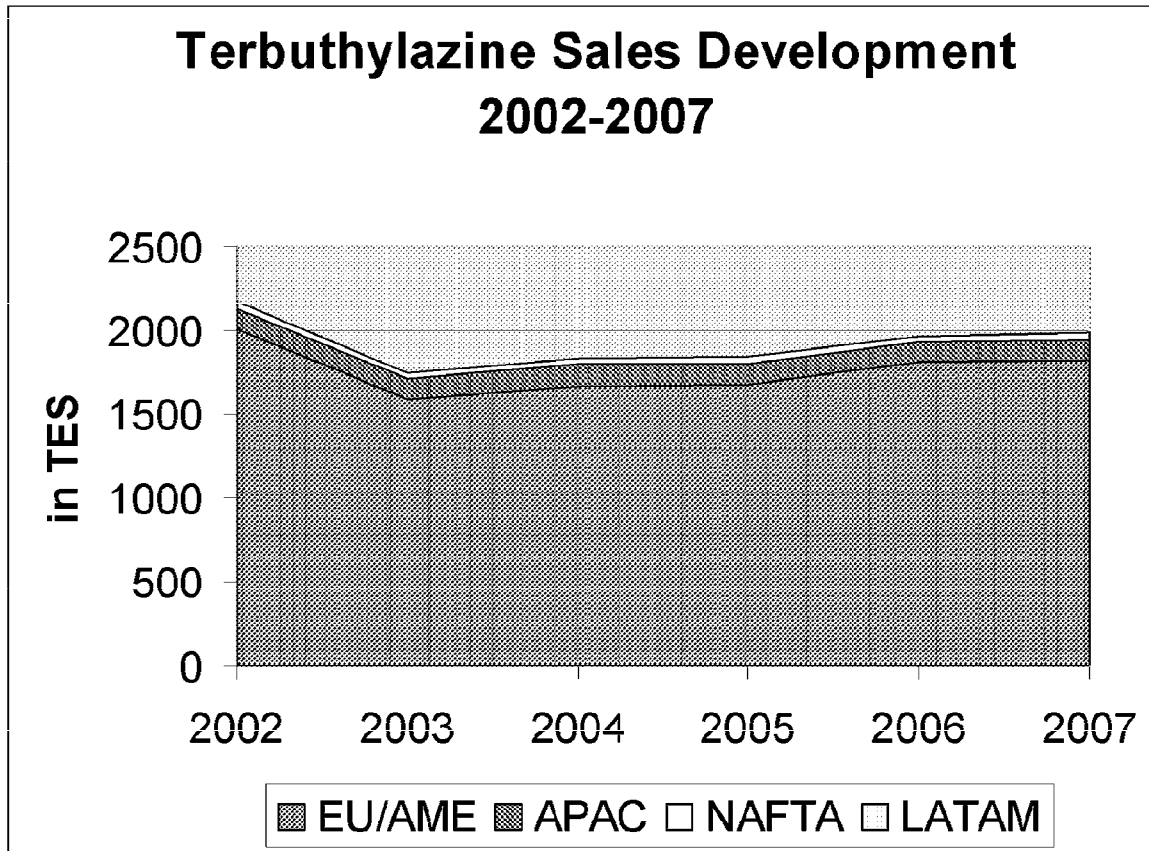
Atrazine has a strong Q1 and Q2 bias in seasonality driven by NAFTA and Australian sales. The high March sales number is driven by bill dates of pre-shipped material in the US and does not necessarily reflect when product is actually shipped. The summer month volumes are largely driven by LATAM sales in Brazil and Argentina. Most of the fourth quarter sales is driven by pre-season, early-fill and marketing programs in the US. (Source: COGNOS July 2002 data.)

Atrazine Seasonality

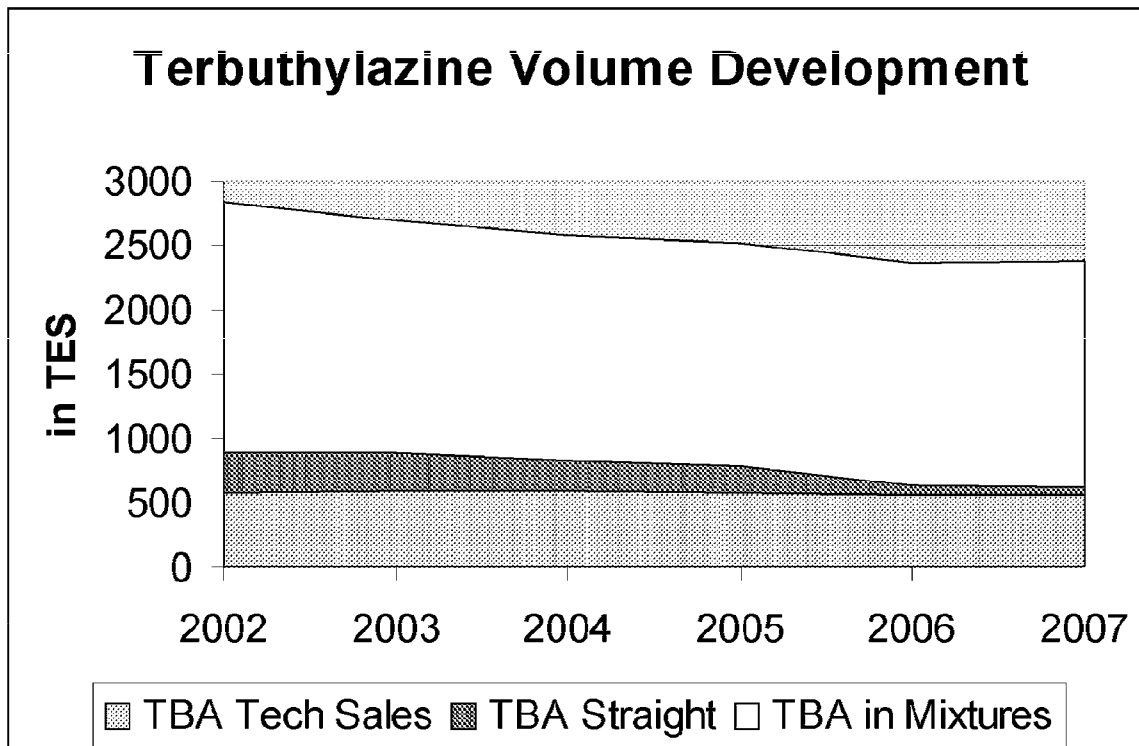


4.1.2 Terbutylazine

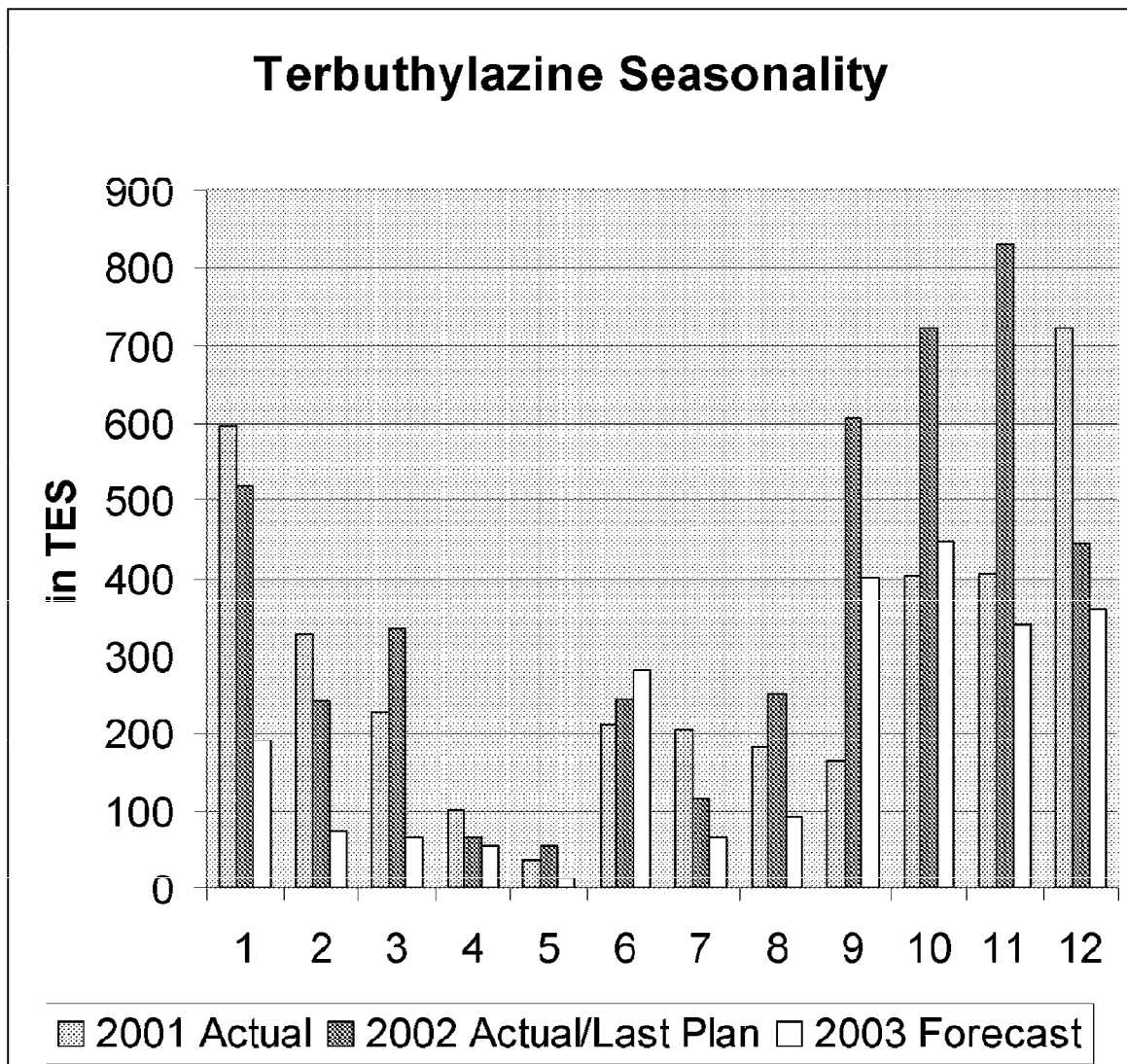
The projected sales curve for Terbutylazine (in tonnes AI) is shown below (source: Sympact 2002 First cut w/challenge). This sales curve does not represent material needed to supply the terbutryn manufacturing process.



Terbuthylazine is used mainly as a mix partner with other ais. The chart below shows the split of volumes over the portfolio:



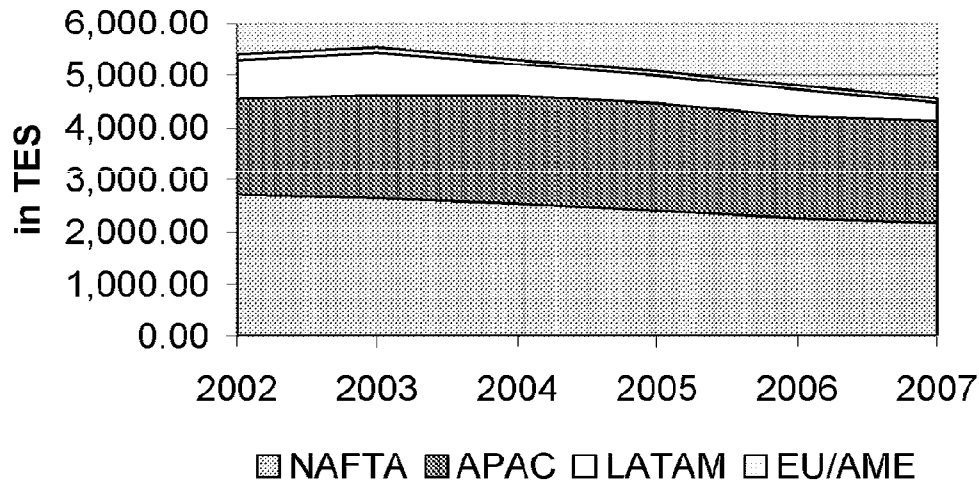
Terbuthylazine has strong Q4 and Q1 sales driven by EU/AME, especially by France and South Africa (source: COGNOS July 2002 data):



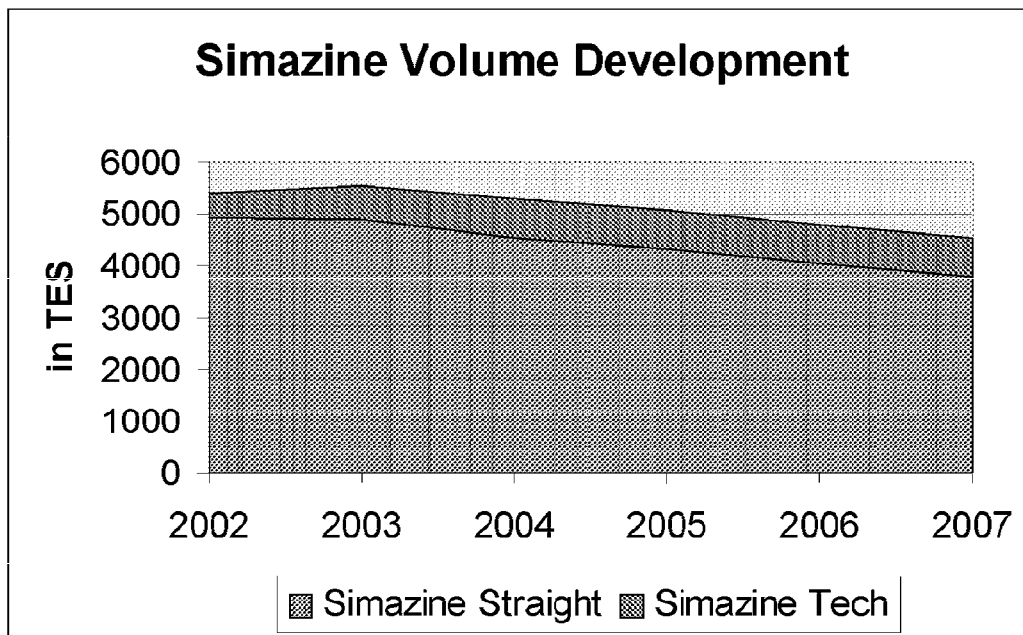
4.1.3 Simazine

The projected sales curve for Simazine (in tonnes AI) is shown below (source: Sympact 2002 First cut w/challenge).

Simazine Volume Development

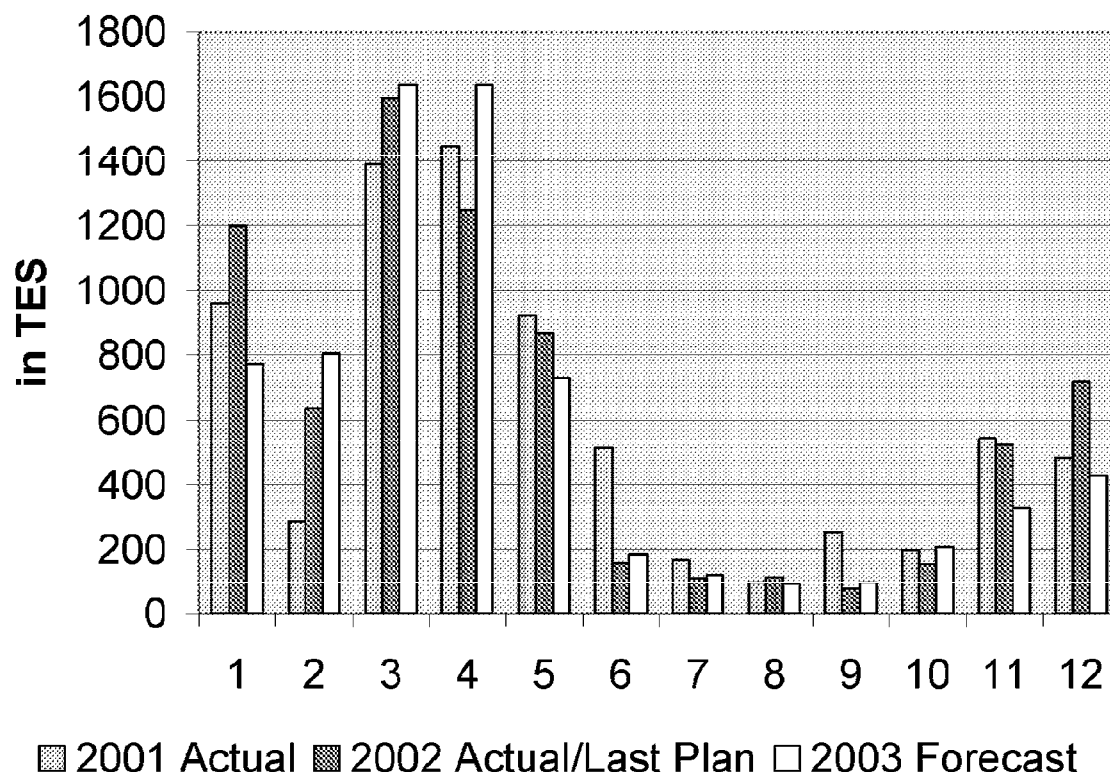


Simazine is used mainly in straight formulations. The chart below shows the split of volumes over the portfolio:



Simazine has strong Q1 and Q2 sales driven by US and Australia (source: COGNOS July 2002 data):

Simazine Seasonality



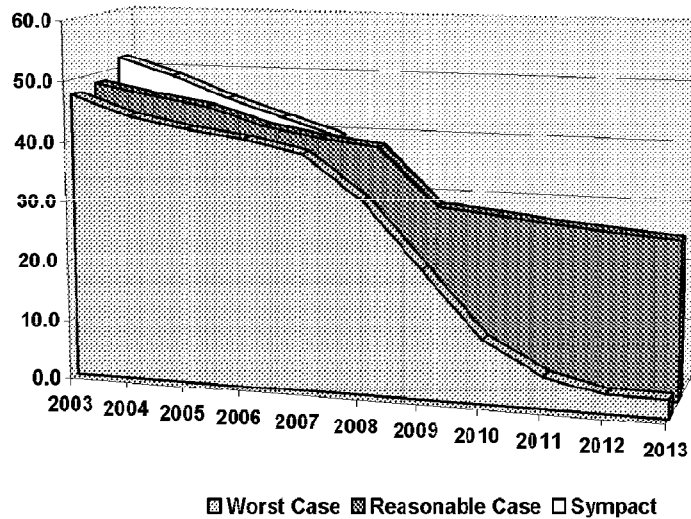
4.2 Upside and Downside Contingency Plans

The Atrazine scenarios do not predict any upside potential due to issues previously discussed. The current Sympact predictions are a little more optimistic than the perceived reasonable volume development over the next 5 years, but are still rather close to current predictions. Factors and assumptions being considered in the reasonable and worst case scenarios are:

- EPA interim RED in mid-2003 (reasonable)
- EU Annex 1 in 2004 (worst)
- Triazine ban in US and EU in 2008 (worst)
- Rate reduction from 1.4 to 1.0 kg ai/ha in 2009 (reasonable)

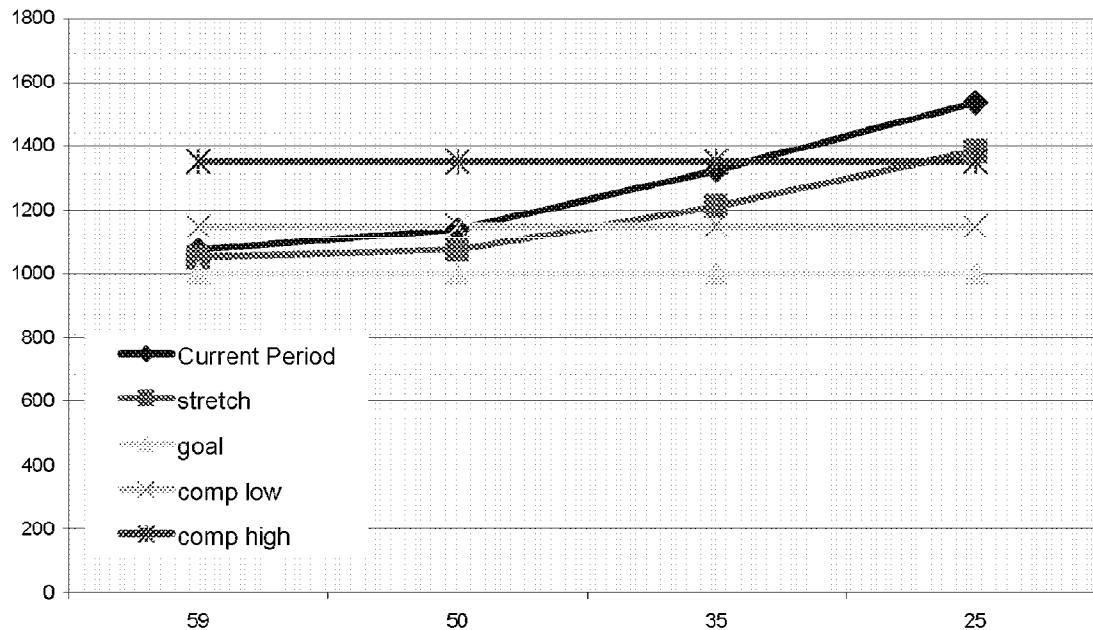
As shown in the following table, the Atrazine volumes remain at a reasonable level through 2007 in all scenarios. Beyond 2008 is where there is concern and uncertainty around the volumes. However, regardless of which scenario is used, there appears to be a large drop in volumes during the five years following 2007 – contributed to either rate reductions or triazine bans.

Atrazine Volume Scenarios 2003-2013

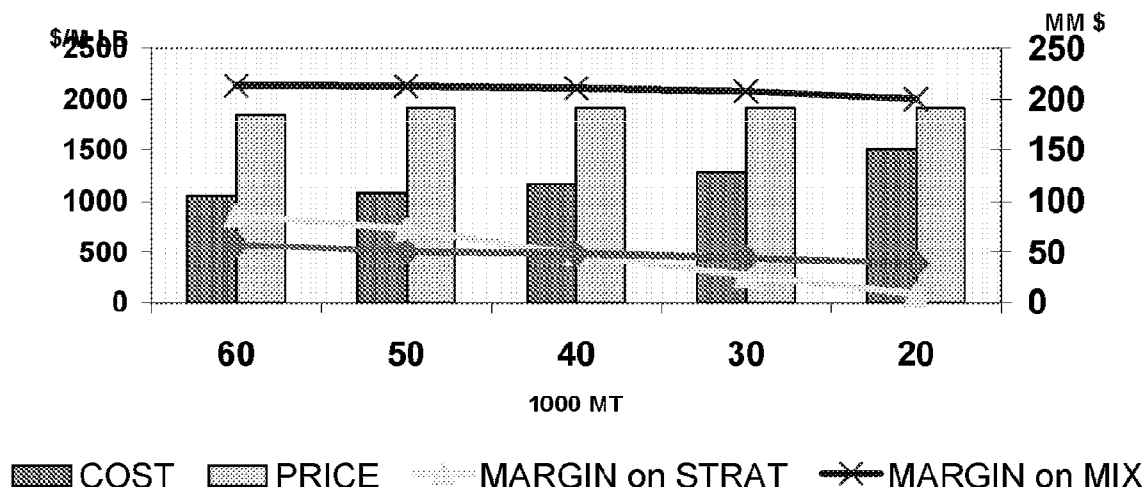


Current models show that the best long-term option for production of ai remains to be at the St. Gabriel plant until volumes reduce to the 25mte per year range at which time it becomes too costly to remain competitive, i.e. margins on straight formulations are diminished to zero and our cost is higher than competitor's cost. Current market pricing of triazines shows about a 20-25% advantage in Syngenta's consolidated cost as compared to purchase price from a competitor. Of course in order to maintain low volumes at the plant, considerable fixed cost reductions would need to be realized as the volumes decrease. The following charts illustrates the margin vs cost picture as volumes decrease:

Atrazine tech cost \$/Mlb



MARGIN & COST VS VOLUME



Of course the factors affecting the anticipated decline in volumes for Syngenta also affects competitors, so there is likely to be a reduction in suppliers as well. Other factors affecting competitive pricing is raw material costs, especially cyanuric chloride, strength of the dollar versus foreign currencies, and registration of Syngenta product in mixtures where the competition does not have this strength. With these variables, it is difficult to predict the number of competitors remaining and the price of their product. However, there is a strong argument that as the volumes decrease, Syngenta could actually grow market share and take volumes from competitors, thus slowing the declining volume effect on Syngenta.

In the case of any upside volumes, Syngenta is poised with current assets to meet the market requirements on all triazines in current assets. The triazine unit is capable of producing up to 68,000 tes per year and the existing formulation and packaging facilities are sized for any upside. Depending on which triazines have volume increases, will determine how the campaigns are run in the unit. Scheduling/planning would have to take into account requirements, seasonality and cross-contamination concerns in planning the upside volumes.

4.3 Operational Supply Concept

Through the years, the plant has become more efficient and has made many improvements that have resulted in higher yield, rates, and capacity. The plant is currently operating at a budget of about 59000 tonnes per year with an achievable capacity of 68000 tonnes per year.

4.3.1 Raw Materials Purchasing

4.3.1.1 Mono Ethyl Amine

Mono ethylamine (MEA) is supplied via pipeline to the Triazine plant. Storage capacity is approximately 100,000 gallons. The plant uses 100% anhydrous MEA in the process for the production of Triazines.

Key supplier for mono ethylamine (MEA) is Air Products who are located adjacent to the St. Gabriel manufacturing site. The plant was built in the late 1970s and converted to a continuous unit in the late 1990s. The current Syngenta contract

expires December 31, 2003 and indicates that 100% of Syngenta requirements will be supplied from Air Products.

Historically, the standard cost for this material has been set at price artificially lower than market price. Efforts to correct to market price were previously not well received within the organization. Starting in 2003, the standard will reflect the current market pricing of this material. Air Products has on site storage of approximately 10 million pounds with a minimum Syngenta inventory of 5 million pounds per the contract.

Syngenta is the largest consumer of MEA globally. It is used to produce Atrazine, Simazine, and Terbutylthazine. Simazine and Terbutylthazine will see a marked increase in unit cost as a result of the price correction.

4.3.1.2 Mono Isopropyl Amine

Mono isopropyl amine (MIPA) is also supplied via pipeline to the Triazine plant at St. Gabriel. This pipeline transfers 100% anhydrous MIPA. On site storage consists of one 100,000 gallon storage tank.

The current supplier for MIPA is Air Products who is located adjacent to the St. Gabriel manufacturing site. The current contract expires December 31, 2003 and indicates that 100% of Syngenta requirements will be supplied from Air Products. Prior to 2003, the standard for this material was also set at a non-market price.

The MIPA price was artificially higher than the merchant market. The 2003 standard will reflect the current market price of this material. Air Products has on site storage of approximately 12 million pounds of MIPA with 6 million pounds dedicated to Syngenta per the contract.

4.3.1.3 Natural Gas

Natural gas is consumed both in the Triazine process in the manufacture of HCN as well as to produce the heat required to dry the technical. The physical supply of St. Gabriel natural gas is supplied via pipeline from Bridgeline, Inc.

The current supply contract expires at the end of 2003. The transmission cost is \$0.07/mmbTU. Bridgeline owns the pipeline as well as the only other natural gas pipeline in the immediate area. It is expected that Bridgeline will wish to negotiate another 10 year contract. Internal discussion on the source of the natural gas for the two pipelines has indicated that access to both pipelines may improve the overall quality of the HCN especially during periods of weather upheaval in the Gulf of Mexico. Additional work is ongoing on this topic.

4.3.1.4 Chlor/Alkali

Chlorine is a key raw material and cost driver in the manufacture of Triazines. Caustic is also a key raw material. Chlorine and caustic are delivered via pipeline to the unit from Pioneer Chemical which is located adjacent to the site.

The current contract calls for 100% supply from Pioneer until December 31, 2005. The price is negotiated every six months.

4.3.1.5 Ammonia

Ammonia is used to produce HCN a precursor to the Triazines. It is currently purchased from Mississippi Chemical. Supply has most recently been imported from Trinidad due to the high cost of natural gas in the last 2 years and its direct impact on ammonia pricing. The site uses rail cars to transport the ammonia to the plant.

The Mississippi Chemical contract expires at the end of 2002. It is an exclusive contract.

4.3.1.6 Tertiary Butyl Amine

Tertiary butyl amine is purchased from BASF for the manufacture of Terbutylazine. The current contract expires at the end of 2002. The material is produced in Geismar, LA in a dedicated unit. The material is delivered via truck to the plant

4.3.2 Active Ingredient Production

Triazine manufacturing currently starts with key raw materials: natural gas, anhydrous ammonia, chlorine, 50% sodium hydroxide, and amines. All are delivered via pipeline except for ammonia, which is supplied by rail. Most are commodity chemicals and are readily available from multiple sources. The back integration to "fire, earth and water" is a significant cost benefit for Triazine production, at high production volumes. Also, formulation is integrated into the AI production process, so that isolation of the technical is not necessary to produce formulated products. This formulation advantage is being offered to current technical customers, both internal and external, to maintain margin and volume.

Because of operational efficiency and inventory control goals, production is scheduled at maximum capacity for each Triazine. Additionally, campaigns of Terbutylazine and Propazine are once per year. Simazine is produced once or twice per year as inventory requirements dictate.

NAFTA production of Atrazine for mixes, Bicep and Lumax, is formulated directly from AI production. This requires that production of Atrazine occur throughout the first part of the year when demands are high and flexibility to meet changes is necessary. At this same time, demands for technical and straight Atrazine are also high.

20 % excess AI production and formulation capacity is available for increased demands.

Current demands are such that two major maintenance periods occur each year. The first of about 45 days is in June/July, and the final is in December.

The number of technical Atrazine grades is under scrutiny and will be reduced. Packaging strategy will be to package and inventory at highest grade possible. Visibility of inventory by grade is being developed. This strategy will result in shared safety stocks and reduced inventory estimated at \$3MM.

4.3.3 Production of Core Formulations

4.3.3.1 Liquid Formulations

Atrazine

The core liquid formulations are the Aatrex 4L and the Gesaprim 500FW/SC. The Aatrex 4L is a NAFTA specific formulation and is made in the triazine unit throughout the year during the Atrazine campaigns. The material does not require formulation from dried technical and therefore can be supplied in the bulk formulation at almost the cost of technical ai alone. It is an extremely efficient formulation and is wet milled and formulated in series with the drying of the technical ai. The mills have a capacity of about 50,000 usgs a day for Aatrex 4L. After formulation and milling, the 4L is stored in bulk and shipped as bulk material to customers and off-site bulk terminals. The 4L is also packaged in a 2X2.5USG presentation for domestic brand and private label sales. The 500SC variant supplied to Argentina is also formulated in the triazine unit in St. Gabriel and is packaged in a 2X10L presentation.

The Gesaprim 500SC/FW formulations are formulated at asset and toll sites in Europe and Latin America. There are 4 different variants produced globally and supplied to regional markets. Material is formulated from spray dried technical and is reslurried in water, mixed with surfactants,

wet milled and then diluted to the final formulation. Product is formulated at Halag and at the Resende site, and will be resited to the Paulinia site upon the closure of Resende.

Australia also has a large volume 600SC formulation that they produce at the Pendle Hill site in Sydney. There are discussion underway of supplying this material from St. Gabriel in the future at a savings.

4.3.3.1.1 Simazine

The core simazine liquid formulations are Princep 4L and Gesatop 500SC. The Princep 4L is a NAFTA specific formulation and is made in the triazine unit once per year in the October campaign. The material does not require formulation from dried technical and therefore can be supplied in the bulk formulation at almost the cost of technical ai alone. It is an extremely efficient formulation and is wet milled and formulated in series with the drying of the technical ai. The unit is able to mill between 20 to 25,000 usgs per day of the simazine flowable which is about half the rates of the Atrazine formulations. The 4L is stored in the silos in bulk and a small amount is shipped as bulk material to customers. The majority of the 4L is packaged in a 2X2.5USG presentation for domestic brand sales. Unlike the Aatrex 4L formulation, the Princep 4L can be formulated from technical ai. This option has been used to supply upside requirements; however, this is a more expensive way to formulate with about a 30% premium associated with the cost.

The other core simazine liquid formulation is the Gesatop 600SC for Australia. This material is currently formulated from spray-dried technical at the Pendle Hill site. As with the Gesaprim formulation, there are considerations of moving this formulation to St. Gabriel as well where the material will be formulated and packaged in a special campaign in December each year directly in the triazine unit.

4.3.3.2 Granular Formulations

4.3.3.2.1 Atrazine

The global granular Atrazine formulation is manufactured at St. Gabriel normally two to three times a year- November, January, and March. The Aatrex/Gesaprim 90WG is a 90% formulation. The spray dried feedstock is a combination of Atrazine and surfactants including wetting and dispersing agents. The material is granulated with atomized water on a pan granulator and is then dried on a fluid bed dryer, classified, and packaged in the unit. Currently, the material is packaged in 25 pound bags for domestic and export use as well as 4X5KG and 10 Kg presentations for export needs. Some repackaging occurs in APAC, Mexico, and other countries from the 25 lb material.

There is consideration to start satellite packaging operations in Europe from bulk bag supplied material. This will help alleviate the complexity of multiple country labels at the St. Gabriel plant and will allow efficiencies to be gained in the process. Tests to certify the durability of granular shipments in FIBC's are currently underway. If favorable, some regional repack options may be explored as early as 2002/2003.

The strategy of product supply to South America has had a major negative impact on granular supply requirements. 2002 projected supply is at X% of 2001's requirement. If the situation in South America changes and granular demands increase, there needs to be a strategy to supply.

There is also an extruded granular formulation – Gesaprim 900WG for use in Australia. This product is formulated from technical and is produced at a toll facility in Melbourne – MASTRA.

4.3.3.2.2 Simazine

The global granular Atrazine formulation is manufactured at St. Gabriel once a year during the October campaign. The Princep Caliber 90/Gesatop 90WG is a 90% formulation. The spray dried feedstock is a combination of simazine and surfactants including wetting and dispersing agents. The material is granulated with atomized water on a pan granulator and is then dried on a fluid bed

dryer, classified, and packaged in the unit. Currently, the material is packaged in 5X10 pound presentation for domestic use and a 5X5KG presentation for export needs.

There is also an extruded granular formulation – Gesatop 900WG for use in Australia. This product is formulated from technical and is produced at a toll facility in Melbourne – MASTRA

4.3.3.3 Support Formulations

Both Atrazine and terbuthylazine are key mix partners with other ais, notably S-MOC and mesotrione. Within NAFTA, Bicep and Mesotrione mixtures are formulated in St. Gabriel from basemix. Basemix is an Atrazine heavy milled input of about 5 pounds Atrazine per gallon. This basemix serves as the foundation for these key formulations. The basemix is mixed with key surfactants, the other ai(s), and is diluted to form the mixture formulation. The consumption of Atrazine in these formulations is substantial at about 9,500 tes in 2002 – mostly with S-MOC. The total used in S-MOC and mesotrione mixtures globally are about 12,000 tes in 2002 and levelling to about 10000 tes in 2007. Availability of Atrazine basemix in critical demand windows (late fall – early spring) is vital. Some inventory of basemix will be carried through year-end to meet historical early January push.

4.3.4 Inventory Management

The current (2002) inventory targets for the triazines are:

AI	Annual Lead AI Sales, in \$MM	Average Inventory Target, in \$MM	Year-end Inventory Target, in \$MM	Year-end Inventory Target in Tes AI	Stock to Sales Ratio
Atrazine	\$172.6	\$31.0	\$27.7	9,900	16.1%
Simazine	\$28.3	\$13.5	\$14.0	3,900	49.5%
Terbuthylazine	\$19.0	\$6.0	\$7.6	2,600	40.0%
All Triazines	\$219.9	\$50.5	\$49.3	16,400	22.4%

It is very difficult to manage simazine and terbuthylazine year-end inventories due to once a year production campaigns. Terbuthylazine is a core product and therefore does carry some safety stocks especially for mixtures with S-MOC and mesotrione. Terbuthylazine sales occur late 4th quarter and all of first quarter. Since the sales are seasonal, it appears the early 4th quarter production campaign is the most efficient time for the ai production. With the phase-out of formulations over the next three years and concentration on key global formulations, it will be easier to maintain appropriate inventory levels.

Simazine is a supplemental product and is carrying too heavy inventory levels for its status in the portfolio. Currently the US and Australia are the key sales areas. The sales for this ai are heavy in first and early second quarter. The product is also part of commercial programs in the US (citrus solutions) that requires inventory to be on hand for any upside sales opportunities. Simazine is also held in consignment at dealers in the US. In order to adequately manage simazine inventories, there must be no consignment of this, or any supplemental product, and there must be no safety stock included in supply requirements. In other words, this ai must be made to forecasted sales only. Until there is regional agreement and discipline on this, simazine will continue to carry heavy inventory levels.

Atrazine is a core product and has year-end inventory levels in line with global expectations. Year-end inventory level is balanced with forecasted first quarter sales and the capacity in St. Gabriel to

meet these sales. In the past, it was difficult for St. Gabriel to meet requirements in the January to March timeframe without carrying heavy inventories in December. However, we are finding that with some scheduling changes and optimisations, the unit is able to keep up with anticipated demands and therefore, year-end inventory levels can be reduced. The biggest contributor to year-end inventory is the late December sales that are projected in the US and consignment inventories in the US. Aatrex 4L is part of the US bulk program and as such is part of an early fill program that requires product to be in customer tanks – in consignment. Atrazine is such a key product for so many customers that we usually carry inventory into December in anticipation of late December sales. Whether these sales occur directly effects year-end inventory. With production expected to end in November, any inventory made for forecasted December sales is at risk of remaining in inventory at year-end. We do carry basemix inventory over year-end, but this inventory sits within the S-MOC supply chain.

In line with global expectations, the triazines will be expected to lower year-end inventory levels in line with global requirement, i.e. stock to sales ratios of 21% in 2003, 20% in 2004, 19% in 2005. This will be a difficult initiative for the triazines due to accurate forecasting and scheduling, northern and southern hemisphere sales, and instantaneous capacity constraint issues. However, by eliminating non-core formulations, concentrating on core global formulations, maintaining safety stock of ai only in the US and shipping ai only when needed regionally, developing accurate seasonalized forecasts, and providing discipline in safety stock levels in sales forecast on all ais, especially on simazine, we can meet these goals.

4.4 Distribution

4.4.1 Primary Distribution

4.4.1.1 Export Distribution

The US has 2 warehouses to hold export material, one at Baton Rouge, LA and the other at Pasadena, TX. Whenever possible shipments will occur directly from the plant. If there is no planned shipment at the time of production, the stock will move to one of the export warehouses in full truckload quantities via a Syngenta preferred carrier and held until the customers need it.

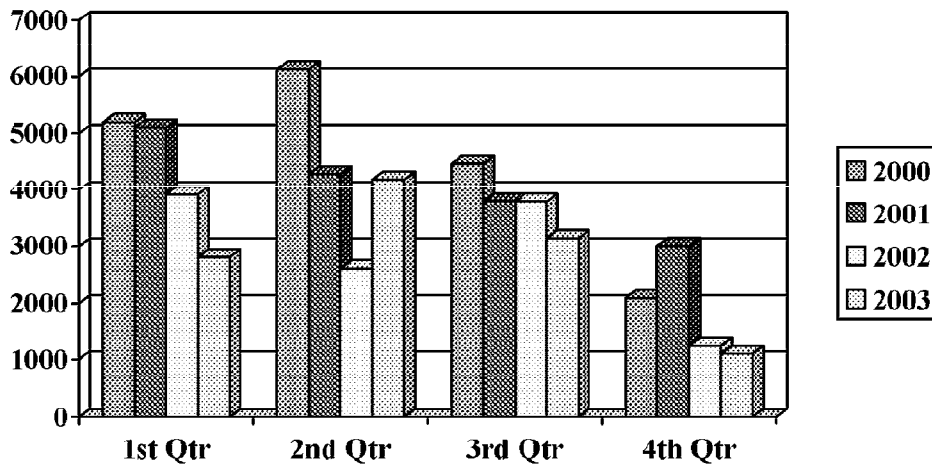
The traffic department at the plant coordinates the move from production to the warehouse.

Shipments to customers are made in full container quantities (there may be a few exceptions). Shipments may be in a 20' or 40' container. Shipments within NAFTA are moved by truck or rail.

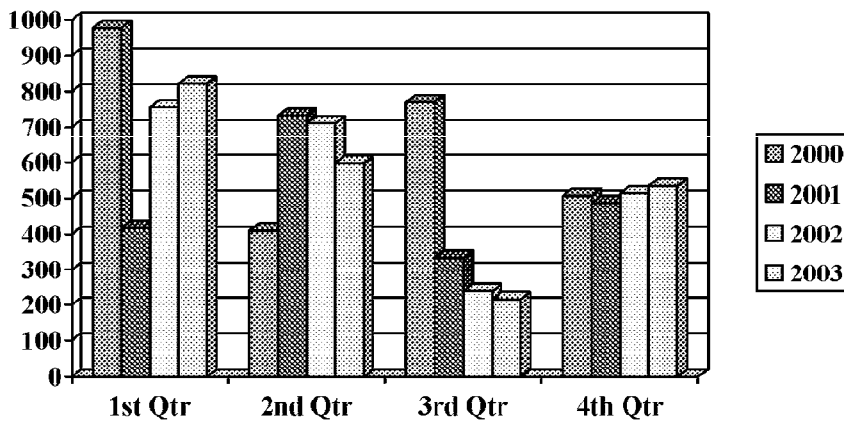
Syngenta has global contracts with steamship lines based upon the loading port and port of discharge. Bookings are made according to the ETA on the purchase order. The US policy is to get the product to the port of discharge +/- 3 days of the requested ETA. This policy is based on normal, forecasted orders and may not include unforecasted upsides. As a rule, Triazines are not sent by airfreight. Any exceptions must have approval from the GSCM.

The attached table shows the volume of product by month that is exported from the US.

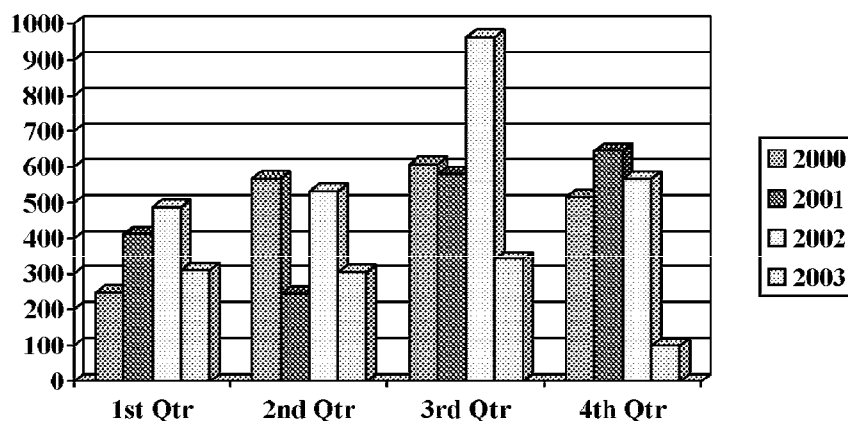
Atrazine Shipments from the US by Quarter (in tons)



Simazine Shipments from the US by Quarter (in tons)



Terbuthylazine Shipments from the US by Quarter (in tons)



4.4.1.2 Domestic Distribution

- Syngenta has 12 bulk distribution facilities and 24 package goods warehouses to service the US market. When possible shipments are made direct from manufacturing to customer locations. If there is no planned shipment at the time of production, the stock will move to one of the domestic warehouses in full truckload quantities via a Syngenta preferred carrier and held until the customers requires the product.
- Packaged goods customers have the option of providing their transportation carrier
- Customer provided transportation is allowed at all packaged goods warehouses
- The traffic department at the plant coordinates the move from production to the warehouses, bulk terminals and customer locations.
- Syngenta has contracts in place with carriers to provide transportation to distribution locations and to customers.

4.4.2 Secondary Distribution

In Australia:

- Atrazine and Simazine are shipped into either Sydney Port for consumption into formulated flowable product at the Pendle Hill facility and/or direct into Melbourne port for consumption by Toller-Mastra into WG formulations.
- Peak Seasons: Atrazine- Jan to May & Sept to Dec different market segments. Simazine-Jan to June.
- Atrazine & Simazine AI is also sold to local trade customers. Consignments usually go directly into their warehouses in either Melbourne, Perth, Brisbane

5 Mid-term Product Supply Chain Design Plans (36-60 month time horizon)

5.1 Strategic Options

Leverage of production and formulation capabilities to capture additional market share outside of NAFTA will enable Syngenta Triazine production to continue to be the low cost supplier for both mixes and straight Triazine business throughout the world. Although straight and technical margins may be somewhat below desired at this time, these volumes continue to make significant contributions to the bottom line while ensuring a stable, flexible, responsive and low cost supply for the high profile mixes. Also, these margins will be poised to rebound as the high flying dollar comes back to earth.

In order to leverage the volumes at St. Gabriel, several items will be considered over the next several years:

- Reduction of fixed cost base at St. Gabriel in line with reduced volumes in order to keep TPC flat or lower.
- Reduce triazine fixed cost absorption at St. Gabriel by filling unutilised capacity in other units.
- Reduce idle triazine capacity as much as possible by formulating and packaging more of the global volumes at the plant where economically feasible.
- Ensuring triazines are utilized as much as possible in support of mesotrione and S-MOC mixtures. Provide basemix and other technical needs on-time in order to capitalize on market opportunities.
- Entering into global contracts with large triazine consumers in order to ensure volume base remains strong.
- Seek new volume growth opportunities outside of NAFTA by aggressively pricing triazines against generic producers – realizing that incremental sales to budget are available at 35% reduced cost and therefore can be offered at lower price while maintaining real profit.
- Aggressively seeking and supporting opportunities within the St. Gabriel plant that allow deflection of fixed cost from triazines, i.e. intermediate sales (HCN and CC) to third parties, Sequestrene sales to BASF, etc.
- Supporting the implementation of Project Discovery ideas in order to put the triazine cost picture on firmer ground.
- Understanding the generic status of triazines, accepting this, and learning to compete in a generic market in order to protect current low cost status by stabilizing or growing volumes through incremental sales, making margin concessions on straight formulations and technical ai sales while protecting margins on mixtures, and leveraging capacity against competitors.
- Aggressively review alternate raw material supply options to leverage against current suppliers and/or for new supply opportunities where possible.
- Reduce the number of formulations in the portfolio and concentrate on global formulations while not sacrificing sales.

5.2 Efficiencies

Numerous ideas developed through Project Discovery should improve yield, throughput, energy consumption and quality to reduce period cost by more than 10% over the next 3 to 5 years. Following is a table illustrating current ideas and their anticipated savings:

To be supplied

5.3 Capital Projects

A current list of projects expected to be implemented over the next 2 years is attached:

Title	In \$MM, US
Molten CC	\$6,000
HPF PAI MACT	\$2,000
HPF Refrig Optimization (Proj Discovery)	\$750
Replace 135-C Condenser	\$200
Powder Pkg Computer Replacement	\$350
Benzene Removal from Natural Gas	\$1,500
Upgrade Baghouse Plenums	\$400
9-0 Unit Packaging Equipment	\$750

In addition to these, the SCT is reviewing the need for additional wetmills in the triazine unit. The mills will allow greater instantaneous capacity needs on simazine and Atrazine flowable during peak season. This will also allow reduced inventory levels at certain times of the year. The anticipated cost of the project would be in the \$1.5MM range.

5.4 T&P – Ranked And Prioritized Projects

The following tables show a list of the identified triazine T&P Projects. This list is not final, but will be ranked and prioritised during August. As identified, there are no major projects except some alternate raw material studies around amines and formulation development around nonyl phenol free surfactants. Otherwise, most of the projects are simply support and help during normal operations.

Project Title	Lead AI	Short Description	Benefit	Risk/Impact/Consequences	Urgency	Overall Rating
Alternate source of MEA, MIPA in atrazine. Screen of atrazine formulations with new alternate suppliers and manage regulatory requirements.	Atrazine	Validate EU or Eastern supplier as alternative to Air Products and screen atrazine formulations with new alternate suppliers.	Lower cost		want	
Atrazine Technical CSFs	Atrazine	Revise CSFs to change related and manage HCB issues Canada	Regulatory requirement		must-1	
Discovery	Atrazine	technical support for cost reduction activities	TPC reduction for St.G. products		must	
G30027 (Aatrex) Global Supply Product Stewardship	Atrazine	Global Supply support for the ai and product line. Activities include providing production support to the plants, managing any field and quality issues (foaming, acceptaol compatibility, etc.) with the product, updating product manufacturing and raw material specifications, IDS requirements, methods, analysis and managing residual impurity (RI) issues on active ingredients, etc.	The support is required to ensure a successful production campaign and supplying an acceptaol product to the marketplace and customer.	A general level of support will be required to maintain your product line, product integrity and meet the customers needs.	must	
HCB Issues with Triazines	Atrazine	Analysis and manage HCB issues with triazine technicals			must	
Low volume Atrazine	Atrazine	Provide order of cost estimates for low volume plant in India/China			open	
Move the Australian 600 SC formulation to supply out of St. Gabriel. Determine the need for alternate inerts. Process grinding study will be required.	Atrazine	Currently produced in Pendle hill plant but in bad cost position. It would be formulated and supplied out of the St. Gabriel triazine unit direct.	Lower cost		must-1	
Support Formulation Development	Atrazine	Gesaprim 500 SC Nonylphenol-free Variant			must-1	
Triazine Scenarios	Atrazine	SC Scenario Planning & Evaluation	Supply Chain Strategy		must	

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Project Title	Lead AI	Short Description	Benefit	Risk/Impact/Consequences	Urgency	Overall Rating
Validate the possibility of using 70% MEA as an alternate supply of MEA	Atrazine	This is a change of form from a 100% to a 705 supply	Lower Cost			want
	Atrazine	Gesaprim 500 SC Nonylphenol-free Variant				open
	Atrazine	Gesaprim 500 SC Nonylphenol-free Variant				open
G27692 (Princep) Global Supply Product Stewardship	Simazine	Global Supply support for the ai and product line. Activities include providing production support to the plants, managing any field and quality issues (foaming, compatibility, etc.) with the product, updating product manufacturing and raw material specifications, IDS customer requirements, methods, analysis and managing residual impurity (RI) issues on active ingredients, etc.	The support is required to ensure a successful production campaign and supplying an acceptable and use product to the marketplace and customer.	A general level of support will be required to maintain our product line, product integrity and meet the customers needs.		must
Product Chemistry Formulations	Terbuthylazine	GS13529/bromoxynil as bromoxynil-heptanoate/bromoxynil as bromoxynil-octanoate SE (333/075/075)				must-1
Validation of alternate source of TBA. Will require formulation screen of terbuthylazine formulations.	Terbuthylazine	Validate EU or Eastern supplier as alternative to Air Products	Lower cost			want

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5.5 Sourcing – Key Raw Materials And Suppliers

5.5.1 Mono Ethyl Amine

Competitive cost analysis is underway to evaluate BASF as a replacement supplier. The intent of the analysis is to determine if the back integration (aka "Verbund") of the BASF supply chain can offset the logistical advantage of the Air Products pipeline. BASF does not have manufacturing capability in the United States. In addition, they can supply only the 70% aqueous solution. This analysis should be complete by the end of 2002.

A third supplier of MEA is Celanese. Celanese has never sold mono ethylamine in the merchant market. They produce for internal use in another Celanese product. Celanese produces this material at their plant in Bucks, AL.

5.5.2 Mono Isopropyl Amine

A competitive cost analysis is ongoing for MIPA from BASF. Effort is ongoing to determine if BASF can competitively compete with Air Products despite the logistical advantage of the pipeline.

Celanese is not under evaluation due to some business uncertainties at Celanese. The Bucks AL plant is currently on the market which is where MIPA is produced.

Syngenta is one of the largest consumers of MIPA behind Monsanto. Monsanto currently uses it to produce Roundup. Celanese supplies MIPA to Monsanto. Currently, the Monsanto business is split 70/30 between Air Products and Celanese.

5.5.3 Natural Gas

A strategy for the purchase of forward contracts of natural gas was agreed by the Global Supply Chain Team and NAFTA Supply Chain management in May 2002. This financial tool will be utilized to protect the cost of natural gas at St. Gabriel for variable and fixed cost requirements. Syngenta is in the process of setting up ISDA Master Agreement with Goldman Sachs.

Natural gas is used for the manufacture of HCN, an intermediate as well as to generate steam at the site. The cost of natural gas at St. Gabriel is based on the NYMEX Henry Hub closing price plus transmission cost in mmBTUs.

5.5.4 Chlor/Alkali

Pioneer Chemical supplies chlorine and caustic via pipeline to St. Gabriel. This site, originally part of Stauffer Chemical, was chosen to support the Triazine business in the 1970s. The current contract calls for 100% supply from Pioneer until December 31, 2005. The price is negotiated every six months. Syngenta requirements are guaranteed first by Pioneer.

The economic health of Pioneer has caused some concern in the last 18 months as they declared Chapter 11 bankruptcy and came out of it in January 2002. The risk to the business is being managed via negotiations around access to the pipeline unloading system in the event of liquidation of Pioneer Chemical. Pioneer has railcar unloading facilities.

5.5.5 Ammonia

Ammonia supply into St. Gabriel has been consistent. Mississippi Chemical's ability to source material from Trinidad has allowed them to remain in business despite the recent economic challenges in natural gas pricing in the United States.

Evaluation of pipeline opportunities for ammonia supply was not successful. Rail car pricing was more than competitive primarily because of the high cost of capital.

PCS is also under evaluation as a new alternative source of ammonia for St. Gabriel once the Mississippi Chemical contract expires at the end of this year.

5.5.6 Tertiary Butyl Amine

BASF has recently completed a capital project to double their tertiary butyl amine capacity as well as provide a dedicated unit. The main market for TB Amine is for tire producers.

Flexsys/Sterling also produce tertiary butyl amine and have been used by Syngenta in the past. They will be re-evaluated at the conclusion of the current contract. In addition, Asian sources of tertiary butyl amine will also be investigated.

5.6 Site Network

Under development.

5.7 Mid-Term Inventory Development

To be developed

5.8 Costed Supply Chain Map („as is“ and „to be“)

Please see attached charts of the “as is”. The will be are being developed at this time.

5.9 COGS Development (per kg ai / 3-5 years rolling plan)

The expected COGS for the ais are as follow based on current 5 year plan:

	Current	2003	2004	2005	2006	2007
Atrazine	\$2.16	\$2.36	\$2.31	\$2.28	\$2.21	\$2.20
Atrazine SF	\$2.53	\$2.73	\$2.68	\$2.65	\$2.58	\$2.57
Terbuthylazine	\$2.56	\$3.38	\$3.26	\$3.24	\$3.14	\$3.14
Terbuthylazine LA	\$3.54	\$3.88	\$3.76	\$3.74	\$3.64	\$3.64
Simazine						

Some comments on the costs:

- These costs do not reflect expected fixed cost reductions as of yet
- The 2003 costs rise sharply due to some adjusted accounting practices with respect to energy and infrastructure absorption

- 2003 variable cost rises due to dramatic increase in chlorine price
- In 2003, amine prices were readjusted to actual versus historical weighted average on MIPA and MEA. This will reduce Atrazine costs and raise simazine, propazine and terbuthylazine costs.
- Cost projections are driven by variable cost which is driven by commodity pricing of raw materials. Syngenta has very little ability to reduce these swings.

6 HSE

To be developed.

7 KPI's and Targets

7.1 Operational (current year)

The KPIs for the triazine supply chain this year are:

- Achieve year-end and average inventory targets per ai as follows:

AI	Annual Lead AI Sales, in \$MM	Average Inventory Target, in \$MM	Year-end Inventory Target, in \$MM	Year-end Inventory Target in Tes AI	Stock to Sales Ratio
Atrazine	\$172.6	\$31.0	\$27.7	9,900	16.1%
Simazine	\$28.3	\$13.5	\$14.0	3,900	49.5%
Terbuthylazine	\$19.0	\$6.0	\$7.6	2,600	40.0%
All Triazines	\$219.9	\$50.5	\$49.3	16,400	22.4%

- Achieve \$6MM savings in raw material purchases against budget
- Identify and implement new savings opportunities to reduce triazine COGs in 2003 vs 2002
- Develop low volume strategy for triazines and identify costs reduction needs to stay level in per kg TPC
- Complete GPSP and have final, GSOP approval by end of 2002

7.2 Mid-term

Mid-term KPIs for the triazine SCT are:

- Continued inventory reduction and improved management to achieve 19% stock to sales ratio by end of 2005
- Reduce fixed cost absorption on triazine by \$12MM (as compared to 2002) by 2005 budget.
- Achieve TPC of <\$2.20/kg on Atrazine by 2005 budget.
- Achieve range reduction targets as identified with number of formulations reduced according to previous chart.

7.3 STI Links

To be determined.